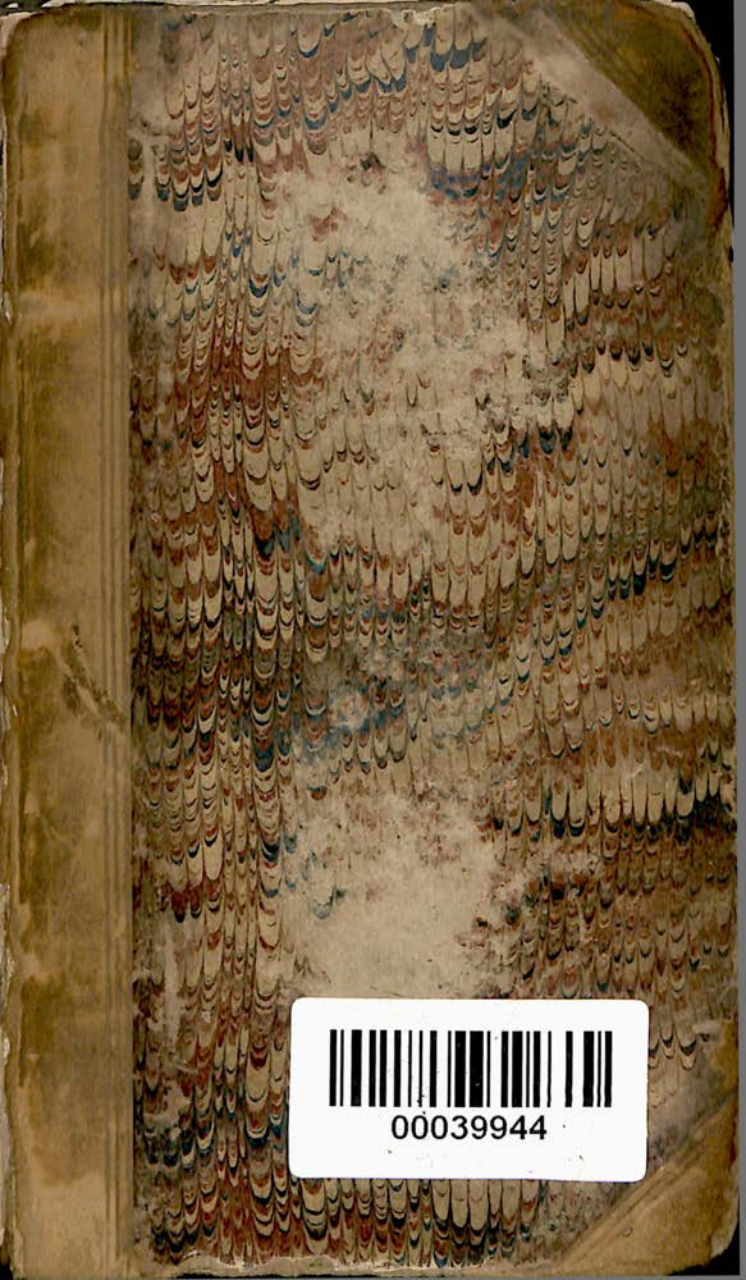
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BOMBAY BRANCH

OF THE

Royal Asiatic Society.

Class

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PREFACE.

THE object of the present Catalogue is to give a complete list of all the genera and species of the Solitary and Social Wasps (VESPIDÆ) which have been described in works, and a description of those in the British Museum which appear to be hitherto undescribed.

The letters B.M. in the margin indicate the species now contained in the Collection of the British Museum, and their absence those which are desiderata.

JOHN EDWARD GRAY.

2nd March, 1857.

00039944

CATALOGUE

OF

HYMENOPTERA.

Div. II. ACULEATA.

Tribe 3. DIPLOPTERA.

Group 1. Solitary Wasps.

Fam. 1. MASARIDÆ.

This family contains some very anomalous species of Wasps, many of them differing in various characters from the true *Vespidæ*, but in one important characteristic they correspond with the latter family,—the prothorax is always prolonged backwards to the base of the wings. The anterior pair of wings have only two submarginal cells. The genus *Paragia* differs from the rest in not having the wings folded when in repose, and in some of the species having the eyes ovate, or but very slightly emarginate.

Genus 1. PARAGIA.

Paragia, *Shuck. Trans. Ent. Soc. Lond.* ii. 81.

1. PARAGIA DECIPIENS.

Paragia decipiens, *Shuck. Trans. Ent. Soc. Lond.* ii. 82. l. t. 8. f. 3 ♀.

Sauss. Mon. Fauss. Guêpes, 54. 1.

Hab. Australia.

2. PARAGIA TRICOLOR. B.M.

Paragia tricolor, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. i. 41. t. 5. f. 1 ♂ (nec ♀).

Paragia Smithii, *Sauss. Mon. Fauss. Guêpes*, 55. 3. t. 2. f. 1 ♀.

Hab. Australia (Adelaide).

3. PARAGIA SAUSSURII. B.M.

Paragia tricolor, *Sauss. Mon. Fauss. Guêpes*, 54. 2 ♀ (nec *Smith*).

Hab. Australia (Perth).

4. PARAGIA ODYNEROIDES. B.M.

Paragia Odyneroides, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. i. 42. t. 5. f. 2 ♀.

Sauss. Mon. Fauss. Guêpes, 56. 4.

Hab. Australia (Hunter River).

5. PARAGIA AUSTRALIS.

Paragia Australis, *Sauss. Ann. Soc. Ent. Fr.* 3rd ser. i. Bull. p. 21; *Mon. Fauss. Guêpes*, 57. 5 ♂ ♀. t. 2. f. 2 ♂.

Hab. Tasmania. (Coll. M. Saussure.)

6. PARAGIA BICOLOR.

Paragia bicolor, *Sauss. Ann. Soc. Ent. Fr.* 3rd ser. i. Bull. p. 21 (1853); *Mon. Fauss. Guêpes*, 58. 6. t. 2. f. 3 ♂.

Hab. Australia. (Paris Museum.)

7. PARAGIA BIDENS. B.M.

Paragia bidens, *Sauss. Mon. Fauss. Guêpes*, 59. 7 ♂ ♀.

Hab. Adelaide.

The male only in the Collection of the British Museum.

8. PARAGIA PRÆDATOR. B.M.

Paragia prædator, *Sauss. Mon. Fauss. Guêpes*, 59. 8 ♀.

Hab. Australia.

9. PARAGIA PICTIFRONS. B.M.

Female. Length 5½ lines.—Black: the head and thorax closely covered with large confluent punctures; the anterior margin of the clypeus truncated, and having a minute tubercle in the middle; the mandibles obtusely subdentate at their apex; the inner orbit of the eyes notched, the notch orange, and a waved orange band crossing the forehead between the notches; an orange line on the lateral margins of the clypeus; the scape

ferruginous, the flagellum indistinctly so beneath. A narrow orange line on the posterior margin of the prothorax, an oblique line emanating from it and uniting with a large yellow spot beneath the wings; the posterior margin of the scutellum, the sides of the metathorax, the tegulæ, and two minute oblong spots on the mesothorax, near the basal margin of the scutellum, orange; the legs pale ferruginous, dashed with yellow; the wings fusco-hyaline, with a dark cloud occupying the marginal and first submarginal cells. The basal segment of the abdomen with a narrow yellow fascia on its posterior margin; the third segment yellow, with a semicircular transverse black spot at the base; the fourth segment yellow, with a transverse black stripe at the base, broadly emarginate on its posterior margin and not extending to the lateral margins of the segment; the fifth segment yellow, with a black spot on each side at the base; the sixth yellow; the abdomen pale ferruginous beneath, with an indistinct yellow transverse band on the third and fourth segments.

Hab. Australia (Swan River).

Genus 2. CERAMIUS.

Ceramius, *Latr. Consid. gén.* (1810).
Gnatho, *Klug, Mag. Nat. Freunde* (nec *Illig. Coleopt.*) (1810).

1. CERAMIUS FONSCOLOMBII. B.M.

Ceramius Fonscolombii, *Klug, Ent. Monogr.* 229. 3 ♂.
Boyer de Fonsc. Ann. Soc. Ent. Fr. 1st ser. iv. 421. t. 10. f. A ♂.
St. Farg. Hym. ii. 590. 1.
Sauss. Mon. Fauss. Guêpes, 62. 1 ♂ ♀.

Hab. South of Europe.

2. CERAMIUS ORANIENSIS.

Ceramius Oraniensis, *St. Farg. Hym.* ii. 591. 2 ♂ ♀.
Lucas, Explo. Sc. Algér. iii. 225.
Sauss. Mon. Fauss. Guêpes, 65. 2.

Hab. Algeria.

3. CERAMIUS CAPENSIS.

Ceramius Capensis, *Sauss. Mon. Fauss. Guêpes*, div. 2. 66. 3. t. 3. f. 3 ♀.

Hab. Cape of Good Hope. (Coll. M. Guérin-Méneville.)

4. CERAMIUS SPIRICORNIS.

Ceramius (Paraceramius) spiricornis, *Sauss. Mon. Fauss. Guêpes*, div. 2. 67. 4. t. 3. f. 5 ♂.

Hab. Central Europe; Spain. (Paris Museum.)

5. Ceramius Lusitanicus.

Ceramius (Paraceramius) lusitanicus, *Klug, Entom. Monogr.* 230 ♂.
Sauss. Mon. Fauss. Guêpes, 69. 5. div. 2. t. 3. f. 6 ♂.

Hab. Middle of France; Spain. (Coll. Dr. Sichel.)

6. Ceramius nigripennis.

Ceramius (Paraceramius) nigripennis, *Sauss. Mon. Fauss. Guêpes*, div. 2. 69. 6. t. 3. f. 4 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

7. Ceramius linearis.

Ceramius (Paraceramius) linearis, *Klug, Entom. Monogr.* 227. 2.
Sauss. Mon. Fauss. Guêpes, div. 2. 71. 7 ♂.

Hab. Cape of Good Hope.

8. Ceramius cerceriformis.

Ceramius (Ceramoides) cerceriformis, *Sauss. Mon. Fauss. Guêpes*, div. 3. 72. 8. t. 4. f. 1 ♂.

Hab. Cape of Good Hope. (Coll. M. Guérin-Méneville.)

9. Ceramius Lichtensteinii. B.M.

Gnatho Lichtensteinii, *Klug, Mag. Gesellsch. Naturf. Freund.* iv. 38. t. 1. f. 3 ♀.
Ceramius Lichtensteinii, *Klug, Entom. Monogr.* 225. 1.
Sauss. Mon. Fauss. Guêpes, div. 4. 73. 9.

Hab. Cape of Good Hope.

10. Ceramius Rex.

Ceramius Rex, *Sauss. Mon. Fauss. Guêpes*, div. 4. 75. 10 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

11. Ceramius Caffer.

Ceramius Caffer, *Sauss. Mon. Fauss. Guêpes*, div. 4. 76. 11.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

12. Ceramius macrocephalus.

Ceramius macrocephalus, *Sauss. Mon. Fauss. Guêpes*, div. 4. 76. 12. t. 3. f. 2 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

13. CERAMIUS CONSOBRINUS.

Ceramius consobrinus, *Sauss. Mon. Fauss. Guêpes*, div. 4. 77. 13 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

14. CERAMIUS VESPIFORMIS.

Ceramius vespiformis, *Sauss. Mon. Fauss. Guêpes*, div. 4. 79. 14 ♀.

Hab. Cape of Good Hope. (Coll. The Marquis Spinola.)

Genus 3. MASARIS.

Masaris, *Fabr. Ent. Syst.* ii. 283 (1793).

1. MASARIS VESPIFORMIS.

Masaris Vespiformis, *Fabr. Ent. Syst.* ii. 283. 1; *Syst. Piez.* 292. 1.
Coqueb. Illustr. Icon. t. 15. f. 4 ♂.
Latr. Ins. iii. 368; *Hist. Crust. et Ins.* xiii. t. 102. f. 8; *Encycl. Méth.* t. 383. f. 7, 8; *Gen. Crust. et Ins.* iv. 144.
St. Farg. Hym. ii. 589. 1.
Schaum, Ann. Soc. Ent. Fr. 3rd ser. i. 653. t. 20. f. 1 ♂ ♀.
Sauss. Mon. Fauss. Guêpes, 92. 1.
Erynnis Romandii, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. Bull. xix. ♀.

Hab. Barbary.

2. MASARIS SPINOLÆ.

Masaris Spinolæ, *Sauss. Mon. Fauss. Guêpes*, 95. 2 ♀.

Hab. Cape of Good Hope.

Genus 4. TRIMERIA.

Erynnis, *Sauss. Ann. Soc. Ent. Fr.* 3 ser. i. *Bull.* p. 22.
Trimeria, *Sauss. Mon. Fauss. Guêpes*, 81.

1. TRIMERIA AMERICANA.

Erynnis Americana, *Sauss. Ann. Soc. Ent. Fr.* 3 ser. i. *Bull.* p. 22.
Trimeria Americana, *Sauss. Mon. Fauss. Guêpes*, 81. 1. t. 4. f. 2, 2 *a*, 2 *b* ♀.

Hab. Brazil.

Genus 5. JUGURTIA.

Celonites, *St. Farg. Hym.* ii. 586 (1841).
Jugurtia, *Sauss. Mon. Fauss. Guêpes*, 83 (1854).

1. JUGURTIA ORANIENSIS.

Celonites Oraniensis, *St. Farg. Hym.* ii. 586. 2 ♂.
Lucas, Explo. Sc. Algér. iii. 227. t. 10. f. 12.
Dufour, Ann. Soc. Ent. Fr. 2nd ser. ix. 58. t. 3. f. 1 ♀ ♂.
Jugurtia Oraniensis, *Sauss. Mon. Fauss. Guêpes*, 84. 1 ♂ ♀.

Hab. Algeria (Oran).

2. JUGURTIA NUMIDA.

Jugurtia Numida, *Sauss. Mon. Fauss. Guêpes*, 85. 2. t. 5. f. 3 ♂.

Hab. Algeria. (Paris Museum.)

Genus 6. CELONITES.

Vespa, pt., *Villers, Entom.* iii. 281 (1789).
Chrysis, pt., *Rossi, Faun. Etrus.* ii. 77 (1790).
Cimbex, pt., *Oliv. Encycl. Méth.* v. 772 (1790).
Celonites, *Latr. Hist. Nat. Ins.* xiii. (1804).
Masaris, *Jurine, Hym.* (1807).

1. CELONITES ABBREVIATUS. B.M.

Vespa abbreviatus, *Villers, Entom.* iii. 281. 38.
Chrysis dubia, *Rossi, Faun. Etrus.* ii. 77. t. 7. f. 10, 11.
Cimbex vespiformis, *Oliv. Encycl. Méth.* v. 772. 16.
Masaris apiformis, *Panz. Faun. Germ.* 79. 19.
Jurine, Hym. t. 10. f. 17.
Celonites apiformis, *Spin. Ins. Ligur.* i. 90.
Latr. Hist. Crust. et Ins. xiii. 354; *Gen. Crust. et Ins.* iv. 144.
Guér. Icon. Règ. Anim. t. 72. f. 1.
St. Farg. Hym. ii. 587. 3.
Celonites abbreviatus, *Sauss. Mon. Fauss. Guêpes*, 88. 1.

Hab. France; Germany; Switzerland; Italy; Algeria.

2. CELONITES FISCHERI.

Celonites Fischeri, *Spin. Ann. Soc. Ent. Fr.* vii. 505 (1838).
St. Farg. Hym. ii. 585. 1.
Lucas, Explo. Sc. Algér. iii. 226. t. 10. f. 11.
Sauss. Mon. Fauss. Guêpes, 89. 2.

Hab. Egypt; Algeria.

3. CELONITES SAVIGNYI.

Celonites Savignyi, *Sauss. Mon. Fauss. Guêpes*, 91. 3.

This species is figured in the "Description of Egypt," by Savigny, Hymenoptera, plate 9. fig. 19. ♂ & ♀. The details are those of a species distinct from the two former. See Saussure's Monograph.

Hab. Egypt.

4. CELONITES CYPRIUS.

Celonites Cyprius, *Sauss. Mém. Soc. Phys. Genève*, xiv. 4. 1.

Hab. Cyprus.

Fam. 2. EUMENIDÆ, *Westw.*

The anterior wings folded longitudinally, having three submarginal cells and two recurrent nervures; the eyes reniform, lateral, and extending to the base of the mandibles; the anterior and intermediate tibiæ armed with one spine at their apex, the posterior tibiæ with two spines; the claws of the tarsi bifid.

Genus 1. RAPHIGLOSSA.

Raphiglossa, *Saunders, Trans. Ent. Soc. Lond.* n. s. i. 72 (1851).

1. RAPHIGLOSSA EUMENOIDES. B.M.

Raphiglossa Eumenoides, *Saund. Trans. Ent. Soc. Lond.* n. s. i. 72. t. 6. f. 4 ♂ ♀.
Sauss. Mon. Guêpes Sol. 2. 1.

Hab. Albania.

2. RAPHIGLOSSA ZETHOIDES.

Raphiglossa Zethoides, *Sauss. Mon. Guêpes Sol.* 3. 2 ♂.

Hab. Algeria.

3. RAPHIGLOSSA FILIFORMIS.

Raphiglossa filiformis, *Sauss. Mon. Guêpes Sol.* 3. 3. t. 8. f. 1 (male only).

Hab. Algeria?

4. RAPHIGLOSSA SYMMORPHA.

Raphiglossa symmorpha, *Sauss. Mon. Guêpes Sol. Supp.* 114 ♀.
Hab. Algeria.

5. RAPHIGLOSSA NATALENSIS. B.M.

Female. Length 6¼ lines.—Black: the head and thorax strongly and closely punctured; the head subquadrate, very convex; the clypeus widely emarginate in front, with a small tubercle in the middle; the mandibles very stout, quadridentate and slightly ferruginous near their apex; the scape and basal half of the flagellum ferruginous. The thorax transverse in front, with the lateral angles produced and acute, the margin of a reddish-yellow as well as the posterior margin of the prothorax; the tubercles, tegulæ, extreme apex of the metathorax at the insertion of the petiole of the abdomen, and the legs, ferruginous; the coxæ black; the wings subhyaline, the anterior pair with a fuscous stain along their anterior margin. Abdomen: the petiole elongate, with a minute tubercle on each side about the middle; the apex yellow; the second segment with a narrow pale yellow band on its apical margin which is continued beneath the abdomen; above, the band is slightly emarginate on each side—beneath, it is notched on each side and widened in the middle; a pale spot in the middle of the apical margins of the third and fourth segments above.

Hab. Port Natal.

Genus 2. STENOGLOSSA.

Raphiglossa, *Saund. Trans. Ent. Soc. Lond.* n. s. i. 72 (1851).
Stenoglossa, *Sauss. Mon. Guêpes Sol.* 4 (1852).

1. STENOGLOSSA ODYNEROIDES. B.M.

Raphiglossa odyneroides, *Saund. Trans. Ent. Soc. Lond.* n. s. i. 72. t. 6. f. 2, 3.
Stenoglossa odyneroides, *Sauss. Mon. Guêpes Sol.* 5. 1. t. 2. f. 2.
Hab. Albania.

Genus 3. GAYELLA.

Gayella, *Spin. Faun. Chili,* vi. (1854).

1. GAYELLA EUMENOIDES.

Gayella Eumenoides, *Spin. Faun. Chili,* vi. t. 2. f. 2.
Sauss. Mon. Guêpes Sol. 6. 1. t. 8. f. 4 ♀.
Hab. Chili.

2. GAYELLA MUTILLOIDES. B.M.

Gayella Mutilloides, *Sauss. Mon. Guêpes Sol. Supp.* 114. 1 ♀.
Hab. Chili.

Genus 4. ELIMUS.

Elimus, *Sauss. Mon. Guêpes Sol.* 7 (1852).

1. ELIMUS AUSTRALIS.

Elimus Australis, *Sauss. Mon. Guêpes Sol.* 8. 1. t. 8. f. 3 ♂.
Hab. Australia. (Coll. J. O. Westwood, Esq.)

Genus 5. SMITHIA.

Smithia, *Sauss. Rev. et Mag. de Zool.* 371 (1855).

1. SMITHIA NATALENSIS. B.M.

Smithia Natalensis, *Sauss. Rev. et Mag. de Zool.* 371 (1855).
Hab. Port Natal.

Genus 6. ZETHUS.

Vespa, pt., *Fabr. Ent. Syst. Supp.* 263. 86 (1798).
Zethus, *Fabr. Syst. Piez.* 282. 51 (1804).
Eumenes, pt., *Latr. Hist. Nat.* xii.
Polistes, pt., *Fabr. Syst. Piez.* 269 (1804).
Didymogastra, *Spin. Mem. Accad. Torino*, xiii. 80 (1850).
Epipona, pt., *Spin. Faun. Chili*, vi. (1854).
Calligaster, *Sauss. Mon. Guêpes Sol.* 23. 2 (1852).

DIV. I.—*Species of Java.*

1. ZETHUS CYANOPTERUS.

Calligaster cyanoptera, *Sauss. Mon. Guêpes Sol.* 23. 2 ♀.
Zethus cyanopterus, *Sauss. Supp. Mon. Guêpes Sol.* 115.
Hab. Java.

DIV. II.—*Species of Africa.*

2. ZETHUS? PUBESCENS. B.M.

Female. Length 6–6¼ lines.—Black, and covered with a thin short cinereous pubescence; the mandibles, scape, and apical joint of the antennæ beneath, ferruginous; the head and thorax closely and strongly punctured; the tegulæ and legs ferruginous, the posterior tibiæ and tarsi obscurely so; the wings iridescent,

subhyaline, and with a fuscous stain along the anterior margin of the superior pair. The petiole of the abdomen elongate and cylindrical, the apex of the abdomen ferruginous.

Hab. Port Natal.

This insect may, when more specimens can be obtained, and the parts of the mouth examined, prove not to belong to the genus *Zethus*, and it is placed there with a doubt; it is represented by a single example in the Collection.

Div. III.—*Species of South America.*

3. Zethus Brasiliensis.

Zethus Brasiliensis, *Sauss. Mon. Guêpes Sol.* 10. 2 ♀.

Hab. Brazil.

4. Zethus chalybeus.

Zethus chalybeus, *Sauss. Mon. Guêpes Sol.* 10. 3 ♀.

Hab. Brazil.

5. Zethus carbonarius. B.M.

Female. Length 17 lines.—Shining jet-black, except the flagellum, which is fulvous beneath, obscurely so at the base; the clypeus finely striated longitudinally, and covered with distant shallow punctures; above the clypeus the head is finely punctured. The thorax finely punctured, the metathorax with a fine short silky cinereous pubescence; the posterior legs within and the tarsi have a similar pubescence; the wings brown, darkest along the anterior margin of the superior pair. The dilatation of the petiole of the abdomen nearly ovate, and as well as the second segment, impunctate; the apical edge of the membrane of the second segment yellow; the following segments with shallow punctures; the abdomen punctured beneath, except the petiole and the base of the second segment.

Hab. Brazil (the Amazons). (Coll. H. W. Bates.)

6. Zethus magnus.

Zethus magnus, *Sauss. Mon. Guêpes Sol.* 11. 4. t. 8. f. 5 ♂.

Hab. Brazil.

7. Zethus lugubris. B.M.

Zethus lugubris, *Perty, Del. Anim. Art.* 144. t. 28. f. 4.
Sauss. Mon. Guêpes Sol. 11. 5 ♂ ♀.

Hab. Brazil.

8. ZETHUS MEXICANUS.

Vespa Mexicana, *Linn. Syst. Nat.* i. 953. 6.
Tigny, Hist. Ins. iii. 579.
Vespa recurvirostris, *De Geer, Mém. Ins.* iii. 579. t. 29. f. 4–6.
Zethus cyanipennis, *Fabr. Ent. Syst.* ii. 277. 86.
Polistes cyanipennis, *Fabr. Syst. Piez.* 275. 30.
Coqueb. Illustr. Icon. Ins. dec. i. t. 6. f. 4.
Vespa mexicana, *Oliv. Encycl.* vi. 673.
Eumenes cyanipennis, *Latr. Hist. Nat. Ins.* xii. 345.
Zethus cyanipennis, *Latr. Hist. Crust. et Ins.* iv. 138.
Erichs. Faun. et Flo. Brit. Guiana, iii. 590.
Sauss. Mon. Guêpes Sol. 12. 6.

Hab. South America; Cayenne.

9. ZETHUS FERRUGINEUS. B.M.

Zethus ferrugineus, *Sauss. Mon. Guêpes Sol.* 14. 10 ♀.

Hab. South America; Brazil (Para).

10. ZETHUS PALLIDUS.

Female. Length 6¼ lines.—Pale testaceous yellow: the head, mesothorax above, the apical margin of the scutellum, and a longitudinal stripe on the petiole of the abdomen, black; the antennæ, mandibles, clypeus, and a transverse line above it, testaceous-yellow. The head and thorax with a thin golden-yellow pubescence, that on the metathorax and abdomen is more dense and longer, coarsely punctured; the wings subhyaline, the superior pair with a yellow stain on their anterior margin; beyond the stigma the margin is slightly fuscous; the mesothorax with two longitudinal yellow stripes; the central suture of the metathorax black. Abdomen: the apical margin of the second segment with a deep groove a little within, the margin itself much elevated.

Hab. Brazil. (Coll. F. Smith.)

11. ZETHUS SCULPTURALIS.

Male. Length 6–7 lines.—Black: the clypeus with large distant shallow punctures; the head above the antennæ coarsely longitudinally rugose; the anterior margin of the clypeus and a small ovate spot at the insertion of the antennæ yellow. Thorax: the prothorax transversely and coarsely rugose before the tegulæ, the mesothorax and scutellum longitudinally so; the metathorax, sides of the thorax, and the clypeus covered with cinereous pubescence; the prothorax with a deep transverse channel in

front, the anterior margin elevated; a spot on the tegulæ behind, and the posterior margin of the scutellum, yellow; the wings fusco-hyaline; the anterior femora yellow at their apex outside, and the tibiæ also with a yellow stripe outside; the claw-joint of the tarsi rufo-testaceous. Abdomen: the apex of the petiole, and the second and third segments with a narrow yellow fascia; the margins of the following segments testaceous; the second segment of an obscure reddish-brown.

Hab. Brazil (Ega on the Amazons). (Coll. H. W. Bates.)

This species is closely allied to *Zethus cinerascens* of Saussure; the sex described is not indicated.

12. ZETHUS FRATERNUS. B.M.

Zethus fraternus, *Sauss. Mon. Guêpes Sol.* 16. 14 ♂.

Hab. Brazil.

13. ZETHUS LOBULATUS. B.M.

Zethus lobulatus, *Sauss. Mon. Guêpes Sol. Supp.* 116. 2. t. 6. f. 4, 4 *a* ♀.

Hab. Brazil (Amazons).

14. ZETHUS CINERASCENS.

Zethus cinerascens, *Sauss. Mon. Guêpes Sol. Supp.* 117. 3.

Hab. Brazil.

15. ZETHUS PARVULUS.

Zethus parvulus, *Sauss. Mon. Guêpes Sol. Supp.* 119. 5. t. 6. f. 1 ♀.

Hab. Brazil.

16. ZETHUS GENICULATUS.

Didymogastra geniculata, *Spin. Mem. Accad. di Torino*, ser. 2. xiii. 80. 61.

Zethus geniculatus, *Sauss. Mon. Guêpes Sol. Supp.* 120. 6 ♂ ♀.

Hab. Para.

17. ZETHUS HILARINUS.

Zethus Hilarinus, *Sauss. Mon. Guêpes Sol. Supp.* 120. 7. t. 6. f. 6 ♀.

Hab. Brazil.

18. ZETHUS AURULENS.

Zethus aurulens, *Sauss. Mon. Guêpes Sol. Supp.* 121. 8. t. 6. f. 5 ♂.

Hab. Brazil.

19. ZETHUS DUBIUS. B.M.

Female. Length 5¼ lines.—Black: the head, thorax and petiole closely and strongly punctured; a minute spot above the insertion of each antenna, and a similar spot behind the eyes, yellow; the anterior margin of the clypeus slightly emarginate in the middle. A line on the anterior margin of the prothorax laterally, a minute spot behind the tegulæ, one on each side of the scutellum, a transverse line on the post-scutellum, from the lateral angles of which a line runs down the metathorax to the insertion of the abdomen, yellow. A minute spot at the apex of the femora behind, another at the base of the tibiæ outside, the intermediate femora with a stripe beneath, and a narrow line on the tibiæ outside, yellow; the wings subhyaline, the anterior margin of the superior pair fuscous. The dilated portion of the petiole of the abdomen elongate-ovate, the apex with a yellow band; the apical margin of the following segments with narrow yellow bands.

The male differs in having the clypeus yellow and in having the anterior margin of the prothorax entirely yellow; otherwise resembling the female.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

20. ZETHUS CARINATUS. B.M.

Male. Length 4 lines.—Black: the head, thorax, and petiole of the abdomen coarsely punctured, a longitudinal carina extending the entire length of the dilated portion, which is elongate and cylindrical. The clypeus, a minute spot in the emargination of the eyes, another above the insertion of each antenna, the scape in front, and a stripe on the mandibles, yellow; the anterior margin of the clypeus truncate in the middle. The anterior margin of the prothorax, a minute spot on each side of the scutellum and post-scutellum, and two longitudinal lines on the metathorax, running down to the insertion of the abdomen, yellow; the anterior and intermediate tibiæ outside, and the intermediate femora at their apex in front, yellow; the anterior tarsi rufo-fuscous; the wings subhyaline, the superior pair faintly clouded at their anterior margin. The apex of the petiole of the abdomen, and the apical margins of the segments with narrow yellow bands.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

21. ZETHUS FUSCUS.

Didymogastra fusca, *Perty, Del. Anim. Art.* p. 145. t. 28. f. 5 ♀.
Zethus fuscus, *Sauss. Mon. Guêpes Sol.* 19. 21.

Hab. Brazil (Amazons).

22. ZETHUS SMITHII.

Zethus Smithii, *Sauss. Mon. Guêpes Sol. Supp.* 122. 9 ♀.

Hab. ——? South America or Java. (Coll. F. Smith.)

23. ZETHUS CÆRULEOPENNIS.

Vespa cæruleopennis, *Fabr. Ent. Syst. Supp.* 263. 86-7.
Zethus cæruleopennis, *Fabr. Syst. Piez.* 282. 1.
Latr. Gen. Crust. et Ins. iv. 137. 138. t. 14. f. 4; *Encycl.* t. 393. f. 12 & 13.
Coqueb. Illustr. Icon. Ins. dec. i. t. 6. f. 4.
Sauss. Mon. Guêpes Sol. 9. 1 ♂ ♀.

Hab. Cayenne; Para.

24. ZETHUS GIGAS. B.M.

Zethus gigas, *Spin. Ann. Soc. Ent. Fr.* x. 129. 1 ♀ (1841).
Sauss. Mon. Guêpes Sol. 12. 7 ♂ ♀.
Calligaster Hero, *de Haan, MSS.*
Sauss. Mon. Guêpes Sol. 23. 1.

Hab. Cayenne.

25. ZETHUS BIGLUMIS.

Zethus biglumis, *Spin. Ann. Soc. Ent. Fr.* x. 135 ♀ (1841).
Sauss. Mon. Guêpes Sol. 19. 20.

Hab. Cayenne.

26. ZETHUS PYRIFORMIS.

Zethus pyriformis, *Spin. Ann. Soc. Ent. Fr.* x. 135. 1.
Sauss. Mon. Guêpes Sol. 15. 12. t. 8. f. 8 ♀.

Hab. Cayenne.

27. ZETHUS ROMANDINUS.

Zethus Romandinus, *Sauss. Mon. Guêpes Sol.* 20. 22. t. 9. f. 1 ♂.

Hab. Cayenne.

28. ZETHUS BINODIS. B.M.

Vespa binodis, *Fabr. Ent. Syst. Supp.* 264. 100-1 ♀.
Coqueb. Illustr. Icon. Ins. dec. ii. t. 15. f. 2.
Eumenes binodis, *Fabr. Syst. Piez.* 287. 8.
Zethus didymogaster, *Spin. Ann. Soc. Ent. Fr.* x. 133 (1841).
Zethus binodis, *Sauss. Mon. Guêpes Sol.* 20. 23.

Hab. Cayenne.

29. ZETHUS NIGER. B.M.

Zethus niger, *Sauss. Mon. Guêpes Sol.* 21. 24. t. 8. f. 9 ♂.

Hab. Cayenne.

30. ZETHUS ARIETIS.

Vespa arietis, *Fabr. Ent. Syst.* ii. 282. 101 ♂.
Polistes arietis, *Fabr. Syst. Piez.* 280. 50.
Vespa arietis, *Oliv. Encycl. Méth.* vi. 676.
Zethus arietis, *Sauss. Mon. Guêpes Sol.* 14. 11.

Hab. South America.

31. ZETHUS JURINEI. B.M.

Zethus Jurinei, *Sauss. Mon. Guêpes Sol.* 15. 13 ♂.

Hab. South America; St. Domingo.

32. ZETHUS ALBOPICTUS. B.M.

Female. Length 4¾ lines.—Black: the head subopake and finely rugose; the scape shining; the flagellum opake and slightly ferruginous at its apex beneath; an oblong yellow spot on the lateral margins of the clypeus. The mesothorax slightly shining and covered with fine shallow punctures; the sides of the thorax and also beneath covered with a fine, short, silky, white pubescence; the anterior margin of the thorax, a spot beneath the wings, two spots on the tegulæ, an interrupted line on the posterior margin of the scutellum, a minute one on each side of the post-scutellum, and a line on the tibiæ outside, white; the wings fusco-hyaline, with a dark cloud on the anterior margin of the superior pair. Abdomen: the posterior margin of the petiole, a narrow band towards the base of the first segment, another on its apical margin, and a similar band on the apical margin of the third segment, white; the white band continued beneath on the apical margin of the first segment.

Hab. St. Domingo.

33. ZETHUS DISCOELIOIDES.

Zethus discoelioides, *Sauss. Mon. Guêpes Sol.* 17. 17 ♀.
Hab. South America; Brazil (Para).

34. ZETHUS MISCOGASTER.

Zethus miscogaster, *Sauss. Mon. Guêpes Sol.* 18. 18 ♀.
Hab. ——? (Museum of Geneva.)

35. ZETHUS DICOMBODA.

Epipona dicomboda, *Spin. Faun. Chili*, vi. 250.
Zethus dicomboda, *Sauss. Mon. Guêpes Sol.* 21. 25 ♂ ♀.
Hab. Chili.

DIV. IV.—*Species of North America and Mexico.*

36. ZETHUS SPINIPES.

Zethus spinipes, *Say, North Amer. Hym.* 387.
Sauss. Mon. Guêpes Sol. Supp. 122. 10.
Hab. United States (Indiana).

37. ZETHUS BICOLOR. B.M.

Zethus bicolor, *Sauss. Mon. Guêpes Sol.* 17. 16 ♂.
Hab. Florida.

38. ZETHUS RUFINODUS.

Eumenes rufinoda, *Latr. Gen. Crust. et Ins.* iv. 137. t. 14. f. 5.
Sauss. Mon. Guêpes Sol. 42. 19. t. 6. f. 3 ♀.
Hab. North America.

39. ZETHUS TUBULIFER.

Zethus tubulifer, *Sauss. Mon. Guêpes Sol.* 18. 19 ♀.
Hab. Mexico (Orizava).

40. ZETHUS WESTWOODI.

Zethus Westwoodi, *Sauss. Mon. Guêpes Sol.* 16. 15. t. 6. f. 2 ♂.
Hab. Mexico.

41. ZETHUS CHRYSOPTERUS.

Zethus chrysopterus, *Sauss. Mon. Guêpes Sol.* 13. 8. t. 8. f. 7 ♂.
Hab. Mexico.

42. ZETHUS VARIEGATUS.

Zethus variegatus, *Sauss. Mon. Guêpes Sol.* 13. 9 ♀.

Hab. Mexico.

43. ZETHUS GRACILIS. B.M.

Male. Length 4½ lines.—Black: the head and thorax coarsely punctured; between the antennæ a transverse ridge, from the middle of which a carina runs downwards, terminating about the middle of the clypeus; a line on the scape in front, and an obscure spot at each extremity of the ridge between the antennæ, yellow. The metathorax with a deep central longitudinal impression, the sides of which are obliquely striated; the wings hyaline and iridescent, a fuscous stain along the anterior margin of the externo-medial cell, and the apical half of the marginal cell clouded. Abdomen covered with a beautiful reflective silky pile; the apical margin of the petiole and also of the following segment with a narrow yellow fascia; the swollen portion of the petiole with large scattered punctures.

Hab. Mexico.

44. ZETHUS LÆVINODUS. B.M.

Female. Length 9 lines.—Black: the head strongly punctured, the punctures on the vertex scattered; the clypeus longitudinally rugose-striate, the striations irregular, the anterior margin rounded, slightly notched in the middle; the mandibles with deep coarse longitudinal grooves. Thorax: shining, with a few fine distant punctures above; the anterior margin of the prothorax sharply elevated, the lateral angles acute; the mesothorax with an abbreviated carina in the middle in front, and on each side with a deeply impressed longitudinal line extending from its anterior margin to the scutellum, the lines towards the scutellum parallel, but diverging towards the anterior margin; a short impressed line over the tegulæ; the metathorax opake, the sides rounded and with a deep longitudinal impression in the middle; covered with silky pubescence; a spot at the lateral angles of the prothorax, another beneath the wings, and an interrupted line on the post-scutellum, yellow; the wings dark brown, with a rich purple iridescence, the posterior wings paler. Abdomen very smooth and highly polished.

Hab. Mexico.

Genus 7. DISCOELIUS.

Vespa, pt., *Panz. Faun. Germ.* 81. 18.
Eumenes, pt., *Spin. Ins. Lig.* ii. 190 (1806–8).
Discoelius, *Latr. Gen. Cr. et Ins.* iv. (1809).
Epipona, pt., *Spin. Faun. Chili,* vi. (1854).

1. DISCOELIUS ZONALIS. B.M.

Vespa zonalis, *Panz. Faun. Germ.* 81. 18.
Eumenes zonalis, *Spin. Ins. Lig.* ii. 190.
Discoelius zonalis, *Latr. Gen. Crust. et Ins.* iv. 120.
St. Farg. Hym. ii. 603. 1.
Blanch. Règne Anim. Ill. Ins. t. 124. f. 4.
Sauss. Mon. Guêpes Sol. 26. 4 ♂ ♀.

Hab. France; Italy; Germany.

2. DISCOELIUS DUFOURII. ||

Discoelius Dufourii, *St. Farg. Hym.* ii 605. 2 ♀.
Sauss. Mon. Guêpes Sol. 27. 5. t. 9. f. 5.

Hab. South of France.

3. DISCOELIUS CHILIENSIS.

Epipona Chiliensis, *Spin. Faun. Chili,* vi. 248 ♀.
Discoelius Chiliensis, *Sauss. Mon. Guêpes Sol.* 25. 1. t. 9. f. 3.

Hab. Chili.

4. DISCOELIUS MERULA.

Discoelius merula, *Curtis, Trans. Linn. Soc.* xviii. 325.
Epipona Chiliensis (var.), *Spin. Faun. Chili,* vi. 348.
Discoelius Spinolæ, *Sauss. Mon. Guêpes Sol.* 25. 2 ♂ ♀.

Hab. Chili.

5. DISCOELIUS PULCHELLUS. B.M.

Discoelius pulchellus, *Sauss. Mon. Guêpes Sol. Supp.* 127. 15 ♂ ♀.

Hab. Mexico; Jamaica.

6. DISCOELIUS ELONGATUS.

Discoelius elongatus, *Sauss. Mon. Guêpes Sol. Supp.* 124. 11. t. 6. f. 7 ♀.

Hab. Australia.

7. DISCOELIUS SPINOSUS.

Discoelius spinosus, *Sauss. Mon. Guêpes Sol. Supp.* 125. 12 ♀.

Hab. New South Wales. (Coll. J. S. Baly, Esq.)

8. DISCOELIUS EPHIPPIUM.

Discoelius ephippium, *Sauss. Mon. Guêpes Sol. Supp.* 125. 13. t. 6. f. 8 ♀.

Hab. New Holland.

9. DISCOELIUS INSIGNIS. B.M.

Discoelius insignis, *Sauss. Mon. Guêpes Sol. Supp.* 126. 14 ♀.

Hab. New Holland.

10. DISCOELIUS VERREAUXII.

Discoelius Verreauxii, *Sauss. Mon. Guêpes Sol.* 26. 3. t. 9. f. 4 ♀.

Hab. Tasmania.

Genus 8. EUMENES.

Vespa, pt., *Linn. Faun. Suec.* 415 (1761).
Eumenes, *Latr. Hist. Nat. Ins.* (1802).
Sphex, pt., *Christ. Hym.* 315 (1791).

DIV. I.—*Species of Europe.*

1. EUMENES COARCTATA. B.M.

Vespa coarctata, *Linn. Syst. Nat.* i. 950 ♀, *& Cab. Mus. Linn. Soc.*
Frisch. Ins. 9. t. 9.
Fabr. Syst. Ent. 370. 39; *Spec. Ins.* i. 467. 53; *Mant. Ins.* i. 292. 65; *Ent. Syst.* ii. 276.
Villers, Ent. iii. 268.
Oliv. Encycl. Méth. 671.
Vespa pedunculata, *Panz. Faun. Germ.* 63. 8.
Vespa coronata, *Panz. Faun. Germ.* 63. 12.
Eumenes atricornis, *Curtis, Brit. Ent.* i. t. 13.
Eumenes coarctata, *Smith, Cat. Brit. Hym.* 44. 1.
Sauss. Mon. Guêpes Sol. 31. 2.

Hab. Europe.

2. EUMENES POMIFORMIS. B.M.

Vespa pomiformis, *Rossi, Faun. Etrus.* 85. 86.
Schrank, Ins. Austr. 79.
Roes. Ins. ii. *Vesp.* t. 17. f. 8.
Geoff. Ins. ii. 376. 9.
Panz. Faun. Germ. 63. 7 ♀.
Oliv. Encycl. Méth. vi. 671.
Fabr. Ent. Syst. ii. 279.
Vespa coarctata, *Panz. Faun. Germ.* 63. 6 ♂.

Vespa dumetorum, *Panz. Faun. Germ.* 63. 4 ♀?
Eumenes arbustorum, *Schæff. Faun. Germ.* 179. 9.
Eumenes Frivaldzkyi, *Schæff. Faun. Germ.* 179. 10.
Sphex annularis, *Christ. Hym.* 315. t. 31. f. 7 ♀.
Sphex viatica, *Christ. Hym.* 315.
Sphex papillaria, *Christ. Hym.* 325. t. 32. f. 10 ♂.
Vespa viatica, *Fabr. Syst. Ent.* 20.
Eumenes pomiformis, *Fabr. Syst. Piez.* 287.
St. Farg. Hym. ii. 600. 3.
Blanch. Hym. ii. 600.
Eumenes atricornis, *Fabr. Syst. Piez.* 289.
Eumenes lunulata, *Fabr. Syst. Piez.* 290.

Hab. Europe.

3. EUMENES DUBIA.

Eumenes dubia, *Sauss. Mon. Guêpes Sol.* 32. 3 (var. E. pomiformis?).

Hab. Centre of France.

4. EUMENES BIPUNCTIS.

Eumenes bipunctis, *Sauss. Mon. Guêpes Sol.* 33. 4. t. 11. f. 7 ♀.

Hab. Europe.

5. EUMENES HUBERTI.

Eumenes Huberti, *Sauss. Mon. Guêpes Sol.* 33. 5. t. 11. f. 6 (var. E. unguiculus ♂?).

Hab. France (Bordeaux).

6. EUMENES DIMIDIATA. B.M.

Eumenes dimidiata, *Brullé, Expéd. Sc. de Morée,* 361.
Vespa pomiformis, *Panz. Faun. Germ.* 63. 7.
Eumenes Amedei, *St. Farg. Hym.* ii. 597.
Lucas, Explo. Sc. d'Algér. iii. 227. t. 11. f. 1 ♀.
Sauss. Mon. Guêpes Sol. 34. 6.

Hab. France (Montpellier); Algeria (Oran).

7. EUMENES UNGUICULA. B.M.

Vespa unguicula, *Villers, Ent.* 40.
Eumenes conica, *Rossi, Mant. Ins.* 135. 299.
Vespa coangustata, *Rossi, Faun. Etrus.* ii. 84.
Eumenes coangustata, *Schæff. Faun. Germ.* 179. t. 7.
Sulzer, Kenzeich. d. Ins. t. 19. f. *a.*

Eumenes coangustata, *Spin. Ins. Lig.* i. 82.
Sauss. Mon. Guêpes Sol. 34. 7.
Vespa infundibuliformis, *Oliv. Encycl. Méth.* vi. 672.
Sphex cursor, *Christ. Hym.* 314. t. 31. f. 6.
Sphex lapicida, *Christ. Hym.* 318. t. 32. f. 5.
Sphex coarctata, *Christ. Hym.* 320. t. 32. f. 6 ♂.
Eumenes dumetorum, *Schweizer, Ent.* fasc. 148.
Eumenes Olivieri, *St. Farg. Hym.* ii. 596. 1.
Blanch. Règne An. Illustr. Ins. t. 124. f. 1.

Hab. Europe; Algeria.

8. EUMENES SICHELII. B.M.

Eumenes Sichelii, *Sauss. Mon. Guêpes Sol.* 36. 8. t. 10. f. 2 ♀.

Hab. Albania.

9. EUMENES TRIPUNCTATA.

Sphex tripunctata, *Christ. Hym.* 317. t. 32. f. 3.
Vespa trimaculata, *Weber, Obs. Entom.* 102. 6.
Eumenes venusta, *Fisch. Mag. Zool.* (1843) 1. t. 122. f. 1, 2 ♂.
Eumenes tripunctatus, *Sauss. Mon. Guêpes Sol. Supp.* 137. 21.

Hab. Russia (borders of the Ural).

10. EUMENES PICTETI.

Eumenes Pictetii, *Sauss. Mon. Guêpes Sol.* 67. 54. t. 12. f. 3 ♀.

Hab. Middle of France (Montpellier).

11. EUMENES TAURICA.

Eumenes Tauricus, *Sauss. Mon. Guêpes Sol. Supp.* 137. 20.

Hab. Crimea.

DIV. II.—*Species of India; China; Java; Philippine Islands.*

12. EUMENES AFFINISSIMA.

Eumenes affinissima, *Sauss. Mon. Guêpes Sol.* 37. 9 ♂.

Hab. India.

13. EUMENES XANTHURA.

Eumenes xanthura, *Sauss. Mon. Guêpes Sol.* 46. 26. t. 10. f. 4 ♀.

Hab. India.

14. EUMENES CIRCINALIS. B.M.

Eumenes circinalis, *Fabr. Syst. Piez.* 286. 4.
Sauss. Mon. Guêpes Sol. 47. 27. t. 10. f. 7.

Hab. India.

15. EUMENES CONICA. B.M.

Vespa conica, *Fabr. Mant. Ins.* i. 293. 69; *Ent. Syst.* ii. 278. 88.
Eumenes conica, *Fabr. Syst. Piez.* 285. 2.
Sauss. Mon. Guêpes Sol. 52. 34.

Hab. India; China; Philippine Islands.

16. EUMENES ESURIENS. B.M.

Vespa esuriens, *Fabr. Mant. Ins.* i. 393. 75.
Oliv. Encycl. Méth. vi. 673.
Vespa pediculata, *Oliv. Encycl. Méth.* vi. 671.
Eumenes esuriens, *Fabr. Syst. Piez.* 286. 7.
Sauss. Mon. Guêpes Sol. 56. 40. t. 11. f. 2.
Eumenes gracilis, *Sauss. Mon. Guêpes Sol.* 57. 41?
Eumenes campaniformis, *Sauss. Mon. Guêpes Sol.* 55. 38.

Hab. India.

DIV. III.—*Species of India, China, and East India Islands.*

17. EUMENES EDWARSII. B.M.

Eumenes Edwarsii, *Sauss. Mon. Guêpes Sol.* 60. 45. t. 11. f. 4 ♀.

Hab. India (Bombay).

18. EUMENES FLAVOPICTA. B.M.

Eumenes flavopicta, *Blanch. Dict. d'Hist. Nat. Hym.* ii. t. 11. f. 2.
Sauss. Mon. Guêpes Sol. 65. 52 ♀.
Eumenes arcuata, *Westw. Ins. Ind.* 90. t. 57. f. 3.

Hab. India.

19. EUMENES BLANCHARDI. B.M.

Eumenes Blanchardi, *Sauss. Mon. Guêpes Sol.* 66. 53. t. 12. f. 2 ♀.

Hab. India (Pondicherry).

20. EUMENES EXIGUA.

Eumenes exiguus, *Sauss. Mon. Guêpes Sol. Supp.* 150. 39. t. 8. f. 4, 4 *a* ♀.

Hab. India.

21. EUMENES INDIANA. B.M.

Eumenes Indianus, *Sauss. Mon. Guêpes Sol. Supp.* 136. 19. t. 7. f. 3 ♀.

Hab. India or Africa.

22. EUMENES BREVIROSTRATA. B.M.

Eumenes brevirostratus, *Sauss. Mon. Guêpes Sol. Supp.* 136. t. 7. f. 1 ♀.

Hab. India.

23. EUMENES DEPRESSA.

Eumenes depressus, *Sauss. Mon. Guêpes Sol. Supp.* 135. 17 ♀.

Hab. India.

24. EUMENES QUADRISPINOSA.

Eumenes quadrispinosus, *Sauss. Mon. Guêpes Sol. Supp.* 134. 16. t. 7. f. 2, 2 *g* ♀.

Hab. India.

25. EUMENES SUBLÆVIS. B.M.

Female. Length 6 lines.—Black, smooth and shining: the head covered with fine shallow punctures; the clypeus, an angular spot on the mandibles at their base, the emargination of the eyes and a line behind them, a spot at the side of the posterior ocelli and a line in front of the anterior one extending to the base of the clypeus, yellow; the scape of the antennæ yellow in front, and the flagellum fulvous beneath. The thorax covered with minute shallow punctures; an interrupted transverse line on the prothorax, two longitudinal ones on the mesothorax, slightly divergent towards the head, two ovate spots on the scutellum, the tegulæ and a spot beneath the wings, a curved line on each side of the metathorax, the outer margin of which is angulated, yellow; the anterior and intermediate femora, tibiæ and tarsi yellow, the former with a dark stripe above, and the tarsi slightly ferruginous; a yellow spot on the intermediate coxæ outside; the posterior femora with a spot at their apex beneath; the wings slightly fuscous, darkest along their anterior margin. Abdomen: the first segment forming a long petiole which is finely roughened above and has a minute tooth on each side about the middle; the apical margin with a narrow yellow band; the apical margins of the second and third segments with a narrow yellow band which is interrupted on each side; the fourth segment with a

transverse yellow line in the middle of its posterior margin; a curved yellow spot on each side of the second segment beneath.

Hab. Borneo (Sarawak). (Coll. A. R. Wallace.)

26. EUMENES FULVIPENNIS. B.M.

Female. Length 12 lines.—Black, with the wings pale reddish-yellow; of the size and form of *E. arcuatus*. The head and thorax closely and rather strongly punctured, very slightly shining; the labrum brown; the clypeus has the anterior margin slightly notched; the wings, with the nervures, ferruginous; the petiole smooth and shining; the rest of the abdomen subopake; on each side of the petiole are two small indistinct pale oval spots; the legs black, with the claw-joint of the tarsi ferruginous.

The male closely resembles the female, and only differs in being rather smaller, and in having an obscure ferruginous stripe on the clypeus.

Hab. Celebes. (Coll. Madame Ida Pfeiffer.)

27. EUMENES INFLEXA.

Eumenes inflexus, *Sauss. Mon. Guêpes Sol. Supp.* 145. 33 ♀.

Hab. Probably Asiatic.

28. EUMENES PUNCTATA. B.M.

Eumenes punctata, *Sauss. Mon. Guêpes Sol.* 37. 10.

Hab. China.

29. EUMENES DECORATA. B.M.

Eumenes decoratus, *Smith, Trans. Ent. Soc. Lond.* n. ser. ii. 36. *Sauss. Mon. Guêpes Sol. Supp.* 138. 22 ♀.

Hab. North China (Tein-Tung).

30. EUMENES QUADRATA. B.M.

Eumenes quadratus, *Smith, Trans. Ent. Soc. Lond.* n. ser. ii. 37.

Hab. North China (Ning-po-Foo).

31. EUMENES IMPERATRIX.

Female. Length 10 lines.—Black: the head covered with large shallow confluent punctures; the clypeus with the basal half yellow; the scape in front, a spot between the antennæ and a line running from it up to the anterior stemma, yellow; the flagellum fulvous beneath; a narrow yellow indistinct line behind

the eyes. Thorax strongly punctured, with the scutellum and metathorax shining and less closely punctured; two yellow spots at the apex of the metathorax at the insertion of the abdomen; the anterior tibiæ in front, the claw-joint of the anterior tarsi, and the extreme apex of the intermediate and posterior femora, yellow. Abdomen: the basal segment clavate, with a transverse interrupted narrow yellow line at the extreme apex above; the second segment with a broad, deeply emarginate fascia on its apical margin.

Hab. North China.

32. EUMENES MELANOSOMA. B.M.

Eumenes melanosoma, *Sauss. Mon. Guêpes Sol.* 61. 46. t. 12. f. 1.

Hab. Java.

33. EUMENES CURVATA. B.M.

Eumenes curvatus, *Sauss. Mon. Guêpes Sol. Supp.* 145. t. 8. f. 1.

Hab. Philippine Islands.

DIV. IV.—*Species of Africa.*

34. EUMENES NIGRA.

Eumenes nigra, *Brullé, Hist. Nat. Il. Canar.* ii. 89.
Sauss. Mon. Guêpes Sol. 38. 12.
Savigny, Descr. Egypt. Hym. t. 8. f. 3 ♀?

Hab. Canary Islands: Egypt?

35. EUMENES DIMIDIATIPENNIS. B.M.

Eumenes dimidiatipennis, *Sauss. Mon. Guêpes Sol.* 51. 33.
Savigny, Descr. de l'Egypt. Hym. t. 8. f. 5.

Hab. Arabia (Djidda); Egypt; India (Punjaub).

36. EUMENES ELEGANS.

Eumenes elegans, *Sauss. Mon. Guêpes Sol.* 58. 42. t. 11. f. 3 ♀.

Hab. Arabia (Djidda); India.

37. EUMENES CONCINNA.

Eumenes concinnus, *Sauss. Mon. Guêpes Sol. Supp.* 144. 30.

Hab. Nubia.

38. EUMENES DISTINCTA.

Eumenes distinctus, *Sauss. Mon. Guêpes Sol. Supp.* 143. 29 ♂.
Hab. Africa.

39. EUMENES MACROCEPHALA.

Eumenes macrocephala, *Sauss. Mon. Guêpes Sol.* 37. 11.
Hab. Cape of Good Hope.

40. EUMENES CAFFRA. B.M.

Vespa caffra, *Linn. Syst. Nat.* i. 951. 21.
Muell. Ed. Linn. Ins. ii. 885. 21.
Gmel. Ed. Linn. i. 2758. 21.
Oliv. Encycl. Méth. vi. 679.
Weber, Obs. Ent. 101. 3.
Sphex cruciata, *Christ. Hym.* 317. t. 32. f. 2.
Eumenes caffra, *Sauss. Mon. Guêpes Sol.* 45. 25.
Hab. Cape of Good Hope.

41. EUMENES PETIOLATA. B.M.

Vespa petiolata, *Fabr. Sp. Ins.* i. 467; *Mant. Ins.* i. 292. 68; *Ent. Syst.* ii. 278. 87.
Gmel. Ed. Linn. 2753. 51.
Oliv. Encycl. Méth. ii. 670.
Eumenes petiolata, *Fabr. Syst. Piez.* 284. 1.
Latr. Ins. iii. 360.
Westw. Ins. India, 90. t. 5. f. 2.
Sphex hesperus, *Christ. Hym.* 311. t. 31. f. 3 ♀.
Sphex rubicunda, *Christ. Hym.* 316. t. 32. f. 1 ♂.
Sphex turrimurarius, *Christ. Hym.* 321. t. 32. f. 32.
Sphex thoracica, *Christ. Hym.* 321. t. 32. f. 9 ♂.
Eumenes petiolatus, *Sauss. Mon. Guêpes Sol.* 47. 28.
Hab. Cape of Good Hope.

42. EUMENES HOTTENTOTTA.

Eumenes Hottentotta, *Sauss. Mon. Guêpes Sol.* 63. 49 ♀.
Hab. Cape of Good Hope.

43. EUMENES ACUMINATA.

Eumenes acuminatus, *Sauss. Mon. Guêpes Sol. Supp.* 147. 36. t. 8. f. 2 ♂.
Hab. Cape of Good Hope.

44. EUMENES DYSCHERA. B.M.

Eumenes dyschera, *Sauss. Mon. Guêpes Sol.* 50. 31 ♀.

Hab. Tropical Africa.

45. EUMENES TINCTOR. B.M.

Sphex tinctor, *Christ. Hym.* 341. t. 31. f. 1.
Eumenes Savignyi, *Guér. Icon. Règn. An.* 446. t. 72. f. 4.
Spin. Ann. Soc. Ent. Fr. vii. 503 (1833).
Eumenes tinctor, *Sauss. Mon. Guêpes Sol.* 49. 30.
Savigny, Descr. de l'Egypt. t. 8. f. 4.

Hab. Senegal; Congo; Egypt.

46. EUMENES TROPICA. B.M.

Eumenes tropicalis, *Sauss. Mon. Guêpes Sol.* 54. 36 ♀.

Hab. Senegal.

47. EUMENES ASINA.

Eumenes asina, *Sauss. Mon. Guêpes Sol.* 59. 43. t. 11. f. 1 ♀.

Hab. Senegal.

48. EUMENES LEPELETIERI. B.M.

Eumenes Lepeletierii, *Sauss. Mon. Guêpes Sol.* 45. 24. t. 10. f. 3 ♀.
Eumenes formosa, *Sauss. Mon. Guêpes Sol.* 56. 39.

Hab. Senegal.

49. EUMENES FENESTRALIS. B.M.

Eumenes fenestralis, *Sauss. Mon. Guêpes Sol.* 53. 35. t. 10. f. 6.

Hab. Congo; Senegal.

50. EUMENES ÆTHIOPICA. B.M.

Eumenes æthiopica, *Sauss. Mon. Guêpes Sol.* 62. 47 ♀.

Hab. Congo.

51. EUMENES LUCASIA.

Eumenes Lucasia, *Sauss. Mon. Guêpes Sol.* 68. 55 ♂.

Hab. Abyssinia.

52. EUMENES INSULARIS. B.M.

Female. Length 8 lines.—Black: the mandibles, labrum, clypeus and a spot above it, the flagellum beneath, and a narrow

line behind the eyes, ferruginous; the vertex rather finely and distantly punctured. The prothorax above, a small spot beneath the wings, an interrupted narrow line on the posterior margin of the post-scutellum, and a similar one on each side of the metathorax, ferruginous; the legs ferruginous, with the coxæ black; the thorax shining black above, finely and not closely punctured; the wings subhyaline, having a brownish tinge with a fine violet iridescence, the anterior margin of the superior pair having a dark fuscous stain. Abdomen smooth, covered with fine changeable pile; the petiole armed on each side with a short stout acute tooth, the extreme apex beneath slightly ferruginous.

Var. A narrow yellow line at the lower portion of the inner orbit of the eyes; the sides of the metathorax ferruginous.

Male.—Differs in having the clypeus and a spot above, and also a narrow line at the inner orbit of the eyes, not entering their emargination, yellow; otherwise, coloured like the variety of the female.

Hab. The Solomon Islands, or New Hebrides (*Voyage of H.M.S. Herald*).

This species is closely allied to *Eumenes Guerini* of Saussure, but the petiole is proportionably longer; it also bears a strong general resemblance to *E. xanthura*.

53. EUMENES GUERINI.

Eumenes Guerini, *Sauss. Mon. Guêpes Sol.* 62. 48 ♀.

Hab. Madagascar.

54. EUMENES REGINA.

Eumenes regina, *Sauss. Mon. Guêpes Sol.* 49. 29. t. 10. f. 8.

Hab. Madagascar.

55. EUMENES FLUCTUANS. B.M.

Eumenes fluctuans, *Sauss. Mon. Guêpes Sol.* 43. 22 ♀.

Hab. New Holland.

56. EUMENES BICINCTA. B.M.

Eumenes bicincta, *Sauss. Mon. Guêpes Sol.* 44. 23.

Hab. New Holland.

57. EUMENES LATREILLEI. B.M.

Eumenes Latreillei, *Sauss. Mon. Guêpes Sol.* 51. 32. t. 10. f. 5.

Hab. New Holland.

58. EUMENES PHILANTES. B.M.

Eumenes philantes, *Sauss. Mon. Guêpes Sol.* 54. 37 ♀.

Hab. New Holland.

59. EUMENES ARCUATA. B.M.

Vespa arcuata, *Fabr. Syst. Ent.* 371. 40; *Spec. Ins.* i. 467; *Mant. Ins.* i. 292. 66; *Ent. Syst.* ii. 276. 83.
Oliv. Encycl. Méth. vi. 670.
Sphex arcuata, *Christ. Hym.* 312.
Eumenes arcuata, *Fabr. Syst. Piez.* 287. 11.
Sauss. Mon. Guêpes Sol. 63. 50.

Hab. New Holland; New Guinea (Triton Bay).

60. EUMENES URVILLEI. B.M.

Eumenes Urvillei, *Sauss. Mon. Guêpes Sol.* 59. 44.

Hab. Coast of New Guinea (Triton Bay).

61. EUMENES PRASLINA. B.M.

Eumenes Praslina, *Guér. Voy. Coquille*, ii. 267. t. 9. f. 6 ♀.
Sauss. Mon. Guêpes Sol. 64. 51.

Hab. New Ireland (Port Praslin).

DIV. V.—*Species of America.*

62. EUMENES URUGUAYENSIS.

Eumenes Uruguayensis, *Sauss. Mon. Guêpes Sol. Supp.* 139. 24. t. 7. f. 6 ♀.

Hab. Brazil.

63. EUMENES CONSOBRINA.

Eumenes consobrinus, *Sauss. Mon. Guêpes Sol. Supp.* 140. 25 ♂.

Hab. Brazil.

64. EUMENES GHILIANII.

Eumenes Ghilianii, *Spin. Mem. Accad. Torino*, xiii. 81. 62 ♂.
Sauss. Mon. Guêpes Sol. Supp. 140. 26.

Hab. Brazil (Para).

65. EUMENES VERSICOLOR. B.M.

Eumenes versicolor, *Sauss. Mon. Guêpes Sol.* 71. 60 ♂.

Hab. Brazil (Santarem). . (Coll. H. W. Bates.)

66. EUMENES MICROSCOPICA.

Eumenes microscopica, *Sauss. Mon. Guêpes Sol.* 72. 62 ♀.

Hab. Brazil.

67. EUMENES FILIFORMIS.

Eumenes filiformis, *Sauss. Mon. Guêpes Sol. Supp.* 146. 34 ♀.

Hab. Brazil.

68. EUMENES GLOBICOLLIS.

Zethus globicollis, *Spin. Ann. Soc. Ent. Fr.* x. 150. t. 3. f. 6 (1841).

Eumenes globicollis, *Sauss. Mon. Guêpes Sol. Supp.* 151. 40, t. 8. f. 6, 6*a*.

Hab. Para.

69. EUMENES PUSILLA.

Eumenes pusillus, *Sauss. Mon. Guêpes Sol. Supp.* 149. 38.

Hab. Brazil.

70. EUMENES PARVULA.

Eumenes parvulus, *Sauss. Mon. Guêpes Sol. Supp.* 149. 37. t. 8. f. 5, 5*a*.

Hab. Brazil.

71. EUMENES AUROPILOSA. B.M.

Male. Length 3 lines.—Black: the head closely punctured, the thorax coarsely so, the punctures confluent, both thinly covered with golden pile, the abdomen densely so. The clypeus slightly produced and emarginate in the middle; the scape in front and the flagellum beneath, ferruginous; a spot in the emargination of the eyes, and a line behind them, yellow. A spot on each side of the prothorax in front, another beneath the wings, the posterior margin of the prothorax, a minute spot behind the tegulæ, a narrow transverse line at the base of the scutellum, the post-scutellum, and two ovate spots on each side of the metathorax, yellow; the legs reddish-yellow, with the coxæ and base of the femora black. The wings subhyaline and iridescent, with a fuscous stain on their anterior margin. Abdo-

men: the basal segment campanulate, its apical margin yellow, with a yellow spot on each side uniting with the apical margin; the apical and lateral margins of the second segment, and an ovate spot on each side uniting with the margin, yellow; the third and following segments yellow; beneath, the apical margin of the second and the following segments yellow.

Hab. Brazil (Villa Nova).

72. EUMENES CINGULATA.

Eumenes cingulatus, *Fabr. Syst. Piez.* 287. 13.
Sauss. Mon. Guêpes Sol. Supp. 151. 41.

Hab. Cayenne.

73. EUMENES FLAVICORNIS.

Eumenes flavicornis, *Sauss. Mon. Guêpes Sol. Supp.* 141. 27. t. 7. f. 4 ♂.

Hab. Venezuela.

74. EUMENES CANALICULATA. B.M.

Vespa canaliculata, *Oliv. Encycl. Méth.* vi. 672.
Vespa diadema, *Fabr. Ent. Syst. Supp.* 263.
Eumenes diadema, *Fabr. Syst. Piez.* 285. 3.
Eumenes canaliculata, *Sauss. Mon. Guêpes Sol.* 68. 56. t. 11. f. 5.

Hab. South America.

75. EUMENES ORBIGNII.

Eumenes Orbignii, *Sauss. Mon. Guêpes Sol.* 69. 57 ♀.

Hab. Bolivia.

76. EUMENES COLONA. B.M.

Eumenes colona, *Sauss. Mon. Guêpes Sol.* 70. 59 ♀.

Hab. Jamaica; Columbia.

77. EUMENES ORNATA.

Eumenes ornatus, *Sauss. Mon. Guêpes Sol. Supp.* 147. 35. t. 8. f. 3.

Hab. West Indies.

78. EUMENES CALLIMORPHA. B.M.

Eumenes callimorpha, *Sauss. Mon. Guêpes Sol.* 71. 61. t. 12. f. 4.

Hab. Columbia.

79. EUMENES PICTA. B.M.

Male. Length 4½ lines.—The head black, the anterior margin of the clypeus notched; the scape in front, the clypeus and a spot above, and also the mandibles, yellow; the scape above and the flagellum ferruginous, the latter with a black stain above towards the apex. Thorax ferruginous, the anterior and posterior margins of the mesothorax with a black stain; the anterior margin of the prothorax, a large spot beneath the wings, the scutellum, post-scutellum and metathorax, yellow; the scutellum at the inferior margin and a triangular stain beneath the post-scutellum ferruginous; the wings subhyaline, with a yellow stain along the anterior margin of the superior pair, a dark fuscous cloud occupying the marginal cell; the legs yellow, the femora with a ferruginous stain above; the thorax beneath, the coxæ and base of the femora more or less, black. Abdomen ferruginous, and covered with a bright changeable pile; the petiole and base of the second segment of the abdomen black, the latter with a transverse ferruginous band dividing the darker part; the apical margin of the segment narrowly bordered with yellow.

Hab. St. Domingo.

This species closely resembles *Eumenes colona*, and both are found in St. Domingo; but, irrespective of size, the present species has the petiole of a different form, being wider and more convex towards the apex; the rest of the abdomen is more globose and not subpetiolated as in *E. colona*.

80. EUMENES ABDOMINALIS.

Sphex abdominalis, *Drury, Illustr. Ins.* i. t. 45. f. 2.
Vespa attenuata, *Oliv. Encycl. Méth.* vi. 674.
Fabr. Syst. Ent. 372. 44; *Spec. Ins.* i. 469; *Mant. Ins.* i. 233. 77; *Ent. Syst.* ii. 282. 98.
Polistes attenuatus, *Fabr. Syst. Piez.* 279. 44.
Eumenes abdominalis, *Sauss. Mon. Guêpes Sol.* 70. 58.

Hab. Cuba.

81. EUMENES MINUTA.

Eumenes minuta, *Fabr. Syst. Piez.* 291. 23 ♂.
Sauss. Mon. Guêpes Sol. 39. 14.

Hab. North America.

82. EUMENES SUBSTRICTA.

Eumenes substricta, *Haldeman, Journ. Acad. Nat. Sc. Philad.* ii. 54.
Sauss. Mon. Guêpes Sol. Supp. 152. 42.

Hab. North America.

83. EUMENES COMPRESSA.

Eumenes compressus, *Sauss. Mon. Guêpes Sol. Supp.* 142. 28. t. 7. f. 5–5 *a*.

Hab. North America?

84. EUMENES GLOBULOSA.

Eumenes globulosus, *Sauss. Mon. Guêpes Sol. Supp.* 139. 23. t. 8. f. 6.

Hab. North America.

85. EUMENES AGILIS.

Eumenes agilis, *Sauss. Mon. Guêpes Sol.* 42. 20.

Hab. North America.

86. EUMENES MACROPS. B.M.

Eumenes macrops, *Sauss. Mon. Guêpes Sol.* 41. 18.

Hab. North Carolina.

87. EUMENES VERTICALIS.

Eumenes verticalis, *Say, Exped. to the Source of St. Peter's Riv. Append.* ii. 78.
Sauss. Mon. Guêpes Sol. 41. 17.

Hab. Pennsylvania.

88. EUMENES FRATERNA. B.M.

Eumenes fraterna, *Say, Exped. to the Source of St. Peter's Riv. Append.* 77.
Sauss. Mon. Guêpes Sol. 40. 16. t. 11. f. 8.

Hab. Pennsylvania.

89. EUMENES FERVENS. B.M.

Eumenes fervens, *Sauss. Mon. Guêpes Sol.* 40. 15 (var. *E. fraterna*?).

Hab. Carolina.

90. EUMENES SMITHII. B.M.

Eumenes Smithii, *Sauss. Mon. Guêpes Sol.* 43. 21. t. 10. f. 1.

Hab. Florida.

91. EUMENES AMERICANA.

Eumenes Americana, *Sauss. Mon. Guêpes Sol.* 39. 13.
Hab. Mexico.

Genus 9. PACHYMENES.

Vespa, pt., *Oliv. Encycl. Méth.* vi. 675 (1791).
Pachymenes, *Sauss. Mon. Guêpes Sol.* 73.

1. PACHYMENES SERICEA.

Pachymenes sericea, *Sauss. Mon. Guêpes Sol.* 74. 1. t. 12. f. 5.
Hab. Brazil.

2. PACHYMENES ATRA.

Pachymenes atra, *Sauss. Mon. Guêpes Sol.* 75. 2.
Hab. Brazil.

3. PACHYMENES PALLIPES. B.M.

Vespa pallipes, *Oliv. Encycl. Méth.* vi. 675.
Pachymenes pallipes, *Sauss. Mon. Guêpes Sol.* 75. 3.
Hab. Cayenne; South America.

4. PACHYMENES BRUNNEA.

Pachymenes brunnea, *Sauss. Mon. Guêpes Sol.* 76. 4. t. 12. f. 6.
Hab. Cayenne; South America.

5. PACHYMENES VENTRICOSA.

Pachymenes ventricosa, *Sauss. Mon. Guêpes Sol.* 77. 5.
Hab. South Carolina.

6. PACHYMENES CHRYSOTHORAX. B.M.

Pachymenes chrysothorax, *Sauss. Mon. Guêpes Sol. Supp.* 153. 43.
Hab. Brazil.

7. PACHYMENES OBSCURA. B.M.

Female. Length 9 lines.—Black, with an obscure ferruginous tinge in parts; the clypeus deeply emarginate at the apex, smooth and slightly shining; the extreme base of the scape and the flagellum ferruginous, the latter slightly fuscous above towards the base. The posterior margin of the prothorax, two abbre-

viated longitudinal lines on the mesothorax, an obscure spot on each side of the scutellum and the post-scutellum, ferruginous; the anterior tibiæ and tarsi in front, and the tips of the joints of the two posterior pairs, ferruginous; the wings flavo-hyaline; the metathorax with a deep longitudinal impression in the middle, and covered with a fine changeable pile. The second segment of the abdomen slightly wrinkled transversely on the disk.

Hab. Mexico.

This insect is placed with some hesitation in the genus *Pachymenes*; but the parts of the mouth cannot be examined: a single example only has been obtained.

Genus 10. SYNAGRIS.

Vespa, pt., *Linn. Syst. Nat.* i. 951 (1766).
Synagris, *Latr. Gen. Crust. et Ins.* iv. 135 (1804).
Apis, pt., *Drury, Illustr. Exot. Ins.* ii.

1. SYNAGRIS CALIDA. B.M.

Vespa calida, *Linn. Syst. Nat.* i. 952. 27.
Fabr. Syst. Ent. 366. 18; *Spec. Ins.* i. 462; *Mant. Ins.* i. 289. 27; *Ent. Syst.* ii. 262. 33; *Syst. Piez.* 259. 25.
Christ. Hym. 225.
Oliv. Encycl. Méth. vi. 683.
Gmelin, Ed. Linn. v. p. 2759.
Vespa carbonaria, *De Geer, Ins.* vii. 607. t. 45. f. 9.
Vespa Capensis, *Linn. Syst. Nat.* i. 952. 22.
Gmelin, Ed. Linn. v. p. 2758. 22.
Muell. Ed. Linn. Ins. ii. 887. 27.
Vespa (Crabro) microrrhœa, *Christ. Hym.* 218. t. 18. f. 6.
Vespa spiniventris, *Illig. Mag.* i. 887. 27.
Synagris calida, *Palis. de Beauv. Ins. Afr. et Amér.* 260. t. 10. f. 6.
St. Farg. Encycl. Méth. x. 510. 2; *Hym.* ii. 594. 4.
Guér. Icon. Règn. An. 446. t. 72. f. 3; *Voy. Abyss. Lefeb.* vi. 362; *Reiche & Fairm. Voy. de Ferret et Galinier*, 452. t. 29. f. 7, 8 ♂.
Sauss. Mon. Guêpes Sol. 79. 1.

Hab. Africa.

2. SYNAGRIS DENTATA.

Synagris dentata, *Sauss. Mon. Guêpes Sol.* 80. 2.

Hab. Africa (Senegal).

3. SYNAGRIS ÆSTUANS. B.M.

Vespa æstuans, *Fabr. Ent. Syst.* ii. 262. 32; *Syst. Piez.* 258. 24.
Oliv. Encycl. Méth. vi. 683.
Gmelin, Ed. Linn. v. 2752. 48.
Synagris æstuans, *Pal. de Beauv. Ins. d'Afr. et Amér.* 260. t. 10. f. 5.
St. Farg. Encycl. Méth. x. 510. 3; *Hym.* ii. 594. 3.
Sauss. Mon. Guêpes Sol. 81. 3.

Hab. Africa.

4. SYNAGRIS ÆQUATORIALIS. B.M.

Synagris æquatorialis, *Sauss. Mon. Guêpes Sol.* 81. 4 ♂.

Hab. Africa.

5. SYNAGRIS MIRABILIS. B.M.

Synagris mirabilis, *Guér. Voy. en Abyss. de Lefeb.* vi. *Ins.* 359. t. 8. f. 8.
Reiche & Fairm. Voy. en Abyss. de Ferret et Galinier, iii. 453. t. 29. f. 10.
Sauss. Mon. Guêpes Sol. 82. 5 ♂.

Hab. Abyssinia.

6. SYNAGRIS CORNUTA. B.M.

Vespa cornuta, *Linn. Syst. Nat.* i. 951. 20; *Mus. Lund. Ulr.* 409. f. 3.
Fabr. Syst. Ent. 363. 7; *Ent. Syst.* ii. 255. 8.
Christ. Hym. 214. t. 18. f. 2.
Oliv. Encycl. Méth. vi. 678. t. 382. 10.
Gmelin, Ed. Linn. v. 2758. 20.
Muell. Ed. Linn. ii. 885. 20.
Apis cornuta, *Drury, Ill. Exot. Ins.* ii. 48. 3.
Synagris cornuta, *Latr. Hist. Ins.* iii. 360; *Hist. Nat. Crust. et Ins.* iv. 135.
St. Farg. Encycl. Méth. x. 510. 1; *Hym.* ii. 593.
Griff. Anim. Kingd. Ins. 106. f. 1. t. 107.
Sauss. Mon. Guêpes Sol. 82. 6. t. 13. 1.

Hab. Cape of Good Hope; Guinea.

7. SYNAGRIS XANTHURA.

Synagris xanthura, *Sauss. Mon. Guêpes Sol. Supp.* 155. 44 ♀.

Hab. Senegal.

8. SYNAGRIS BELLICOSA.

Synagris bellicosa, *Sauss. Mon. Guêpes Sol.* 84. 7.

Hab. Senegal.

9. SYNAGRIS ABYSSINICA. B.M.

Synagris Abyssinica, *Guér. Voy. en Abyss. de Lefeb.* vi. 360. *Reiche & Fairm. Voy. en Abyss. de Ferret et Galinier,* iii. 453. t. 29. f. 9 ♂.

Hab. Abyssinia.

10. SYNAGRIS MINUTA.

Synagris minuta, *Sauss. Mon. Guêpes Sol.* 85. 9 ♂.

Hab. Cape of Good Hope.

11. SYNAGRIS SPINOSUSCULA.

Synagris spinosuscula, *Sauss. Mon. Guêpes Sol.* 85. 10 ♂.

Hab. Abyssinia.

12. SYNAGRIS ANALIS. B.M.

Synagris analis, *Sauss. Mon. Guêpes Sol.* 86. 11. t. 13. f. 5 ♂.

Hab. Abyssinia.

13. SYNAGRIS HUBERTI.

Synagris Huberti, *Sauss. Mon. Guêpes Sol. Supp.* 156. 45. t. 8. f. 8, 8 *a* ♂.

Hab. Tropical Africa.

14. SYNAGRIS EMARGINATA. B.M.

Synagris emarginata, *Sauss. Mon. Guêpes Sol. Supp.* 157. 46 ♂.

Hab. Africa.

15. SYNAGRIS PENTAMERIA.

Synagris pentameria, *Sauss. Mon. Guêpes Sol.* 87. 12 ♂.

Hab. Cape of Good Hope.

16. SYNAGRIS ABDOMINALIS.

Synagris abdominalis, *Sauss. Mon. Guêpes Sol. Supp.* 157. 47. t. 8. f. 7 ♂.

Hab. Africa.

17. Synagris Spinolæ.

Synagris Spinolæ, *Sauss. Mon. Guêpes Sol. Supp.* 158. 48. t. 8. f. 9, 9 *a* ♂.

Hab. Spain.

Genus 11. MONTEZUMIA.

Vespa, pt., *Oliv. Encycl. Méth.* vi. 675 (1791).
Eumenes, pt., *Fabr. Syst. Piez.* 288 (1804).
Odynerus, pt., *Spin. Ann. Soc. Ent. Fr.* x. 127 (1841).
Montezumia, *Sauss. Mon. Guêpes Sol.* 87.

1. Montezumia rufidentata. B.M.

Montezumia rufidentata, *Sauss. Mon. Guêpes Sol.* 88. 1 ♀.

Hab. Brazil.

2. Montezumia azureipennis. B.M.

Montezumia azureipennis, *Sauss. Mon. Guêpes Sol.* 89. 2 ♀.

Hab. Brazil.

3. Montezumia azurescens.

Odynerus? azurescens, *Spin. Compt. Rend. Hym. Mem. Accad. Torino*, xiii. new ser. 83. 64.
Montezumia rufipes, *Sauss. Mon. Guêpes Sol.* 89. 3. t. 15. f. 1 ♀.

Hab. Brazil.

4. Montezumia rubritarsis.

Montezumia rubritarsis, *Sauss. Mon. Guêpes Sol.* 90. 4 ♀.

Hab. Brazil.

5. Montezumia cærulea. B.M.

Montezumia cærulea, *Sauss. Mon. Guêpes Sol.* 90. 5. t. 12. f. 8 ♀.

Hab. Guiana.

6. Montezumia morosa.

Montezumia morosa, *Sauss. Mon. Guêpes Sol.* 90. 6.

Hab. South America.

7. Montezumia ferruginea.

Montezumia ferruginea, *Sauss. Mon. Guêpes Sol.* 91. 7.

Hab. South America.

8. MONTEZUMIA ANCEPS.

Montezumia anceps, *Sauss. Mon. Guêpes Sol.* 92. 8 ♀.

Hab. Chili.

9. MONTEZUMIA PLATINA.

Montezumia platina, *Sauss. Mon. Guêpes Sol.* 92. 9. t. 15. f. 3 ♀.

Hab. Buenos Ayres.

10. MONTEZUMIA CORTESIA.

Montezumia cortesia, *Sauss. Mon. Guêpes Sol.* 92. 10. t. 15. f. 2 ♀.

Hab. Mexico.

11. MONTEZUMIA LEPRIEURI.

Odynerus Leprieuri, *Spin. Ann. Soc. Ent. Fr.* 1st ser. x. 127.
Montezumia pelagica, *Sauss. Mon. Guêpes Sol.* 93. 11.

Hab. Brazil.

12. MONTEZUMIA SPINOLÆ.

Montezumia Spinolæ, *Sauss. Mon. Guêpes Sol.* 93. 12. t. 12. f. 9.

Hab. ——?

13. MONTEZUMIA INFUNDIBULIFORMIS. B.M.

Eumenes infundibuliformis, *Fabr. Syst. Piez.* 288. 13.
Montezumia dimidiata, *Sauss. Mon. Guêpes Sol.* 94. 13.

Hab. Mexico.

14. MONTEZUMIA MEXICANA.

Montezumia Mexicana, *Sauss. Mon. Guêpes Sol.* 94. 14.

Hab. Mexico.

15. MONTEZUMIA CHALYBEA. B.M.

Montezumia chalybea, *Sauss. Mon. Guêpes Sol. Supp.* 161. 49. t. 9. f. 2, 2 *d.*

Hab. Brazil.

16. MONTEZUMIA PETIOLATA.

Montezumia petiolata, *Sauss. Mon. Guêpes Sol. Supp.* 161. 50. t. 9. f. 1, 1 *a*, 1 *b*.

Hab. Brazil.

17. MONTEZUMIA NIGRICEPS.

Eumenes nigriceps, *Spin. Ann. Soc. Ent. Fr.* 1st ser. x. 128. 79.
Sauss. Mon. Guêpes Sol. Supp. 162. 51.

Hab. Cayenne.

18. MONTEZUMIA INFERNALIS.

Odynerus infernalis, *Spin. Compt. Rend. Ins. Mem. Accad. Torino*, xiii. 84. 65.
Sauss. Mon. Guêpes Sol. Supp. 162. 52.

Hab. Para.

19. MONTEZUMIA ANALIS. B.M.

Montezumia analis, *Sauss. Mon. Guêpes Sol. Supp.* 163. 53.

Hab. South America.

20. MONTEZUMIA SEPULCHRALIS.

Montezumia sepulchralis, *Sauss. Mon. Guêpes Sol. Supp.* 163. 54.

Hab. Brazil.

21. MONTEZUMIA MORTUORUM.

Montezumia mortuorum, *Sauss. Mon. Guêpes Sol. Supp.* 164. 55.

Hab. Brazil.

22. MONTEZUMIA BRASILIENSIS.

Montezumia Brasiliensis, *Sauss. Mon. Guêpes Sol. Supp.* 164. 56.

Hab. Brazil.

23. MONTEZUMIA MACROCEPHALA.

Montezumia macrocephala, *Sauss. Mon. Guêpes Sol. Supp.* 165. 57 ♂. t. 9. f. 3.

Hab. Brazil.

24. MONTEZUMIA CARINULATA. B.M.

Odynerus carinulatus, *Spin. Compt. Rend. Hym. Mem. Accad. Torino*, xiii. 67. 63.
Montezumia carinulata, *Sauss. Mon. Guêpes Sol. Supp.* 166. 58.

Hab. Brazil (Para).

25. MONTEZUMIA INDICA. B.M.

Montezumia Indica, *Sauss. Mon. Guêpes Sol. Supp.* 167. 59. t. 9. f. 4.

Hab. Java.

Genus 12. MONOBIA.

Vespa, pt., *Linn. Syst. Nat.* i. 951 (1766).
Odynerus, pt., *St. Farg. Hym.* ii. 619 (1841).
Monobia, *Sauss. Mon. Guêpes Sol.* 94 (1852).

1. MONOBIA QUADRIDENS. B.M.

Vespa quadridens, *Linn. Syst. Nat.* i. 951. 15.
Christ. Hym. 234.
Muell. Ed. Linn. Ins. ii. 883. 15.
Gmel. Ed. Linn. Syst. Nat. ii. 27. 55. 15.
Vespa uncinata, *Fabr. Syst. Ent.* 367. 22; *Spec. Ins.* i. 463; *Mant.* i. 289. 32; *Ent. Syst.* ii. 264. 39; *Syst. Piez.* 259. 31.
Oliv. Encycl. Méth. vi. 685.
Vespa cincta-nigra, *De Geer, Ins.* iii. 583. 8. t. 29. f. 12.
Odynerus uncinatus, *St. Farg. Hym.* ii. 619. 9.
Monobia quadridens, *Sauss. Mon. Guêpes Sol.* 97. 4. t. 16. f. 1.

Hab. North Carolina; North America.

2. MONOBIA SYLVATICA. B.M.

Monobia sylvatica, *Sauss. Mon. Guêpes Sol.* 95. 1. t. 15. f. 7.

Hab. North America.

3. MONOBIA ANOMALA.

Monobia anomala, *Sauss. Mon. Guêpes Sol.* 96. 3. t. 15. f. 4.

Hab. Brazil.

4. MONOBIA ANGULOSA. B.M.

Monobia angulosa, *Sauss. Mon. Guêpes Sol.* 98. 5. t. 15. f. 5.

Hab. Brazil.

5. MONOBIA APICALIPENNIS. B.M.

Monobia apicalipennis, *Sauss. Mon. Guêpes Sol.* 98. 6. t. 15. f. 6.

Hab. Brazil (Para).

6. MONOBIA CYANIPENNIS.

Odynerus cyanipennis, *Guér. Voy. Coq. Ins.* 264. t. 9. f. 5.
Monobia cyanipennis, *Sauss. Mon. Guêpes Sol.* 96. 2.

Hab. Chili (Payta).

7. MONOBIA EGREGIA.

Monobia egregia, *Sauss. Mon. Guêpes Sol. Supp.* 168. 60. t. 9. f. 5.

Hab. West India Islands.

Genus 13. ABISPA.

Vespa, pt., *Fabr. Syst. Ent.* 362 (1775).
Odynerus, pt., *Guér. Voy. Coq. Ins.* 265 (1822–25).
Abispa, *Mitchell, Exped. East. Austr.* i. 104 (1838).
Monorebia, *Sauss. Mon. Guêpes Sol.* 98 (1852).

1. ABISPA EPHIPPIUM. B.M.

Vespa ephippium, *Fabr. Syst. Ent.* 362. 2; *Mus. Dom. Banks.*; *Mant. Ins.* i. 287. 3; *Ent. Syst.* ii. 254. 3; *Syst. Piez.* 254. 3.
Christ. Hym. 237.
Oliv. Encycl. Méth. vi. 677.
Gmelin, Ed. Linn. Syst. Nat. i. 2748. 36.
Abispa ephippium, *Mitchell, Exped. East. Austr.* i. 104.
Smith, Trans. Ent. Soc. Lond. 2nd ser. 177. t. 26. f. 1, 2.
Sauss. Mon. Guêpes Sol. Supp. 170.
Monorebia ephippium, *Sauss. Mon. Guêpes Sol.* 100. 2. t. 15. f. 9.

Hab. Australia.

2. ABISPA AUSTRALIS. B.M.

Female. Length 1 inch.—This species closely resembles *A. splendida*, but appears to be intermediate between that species and *A. ephippium*. From *A. splendida* it differs in having the head entirely yellow; the scutellum and post-scutellum yellow; the metathorax is proportionably longer, its lateral posterior angles are acute, and on each side is a sharp serrated ridge; the basal segment of the abdomen has the sides less distinctly rounded. From *A. ephippium* it is distinguished by the colouring of the basal segment of the abdomen, which in this species is black, with a broad yellow band on its apical margin which widens at the sides; the segment is also more campanulate than in *A. ephippium*, which has the segment entirely yellow.

Hab. Port Essington.

This insect is regarded by Saussure as a variety of *A. splendida*;

if it be a variety, it must, I think, be so of *A. ephippium*: this point must be left for future determination by some entomologist resident in Australia who can carefully observe the habits of the insect.

3. ABISPA SPLENDIDA. B.M.

Odynerus splendidus, *Guér. Voy. Coq. Ins.* 265.
Monorebia splendida, *Sauss. Mon. Guêpes Sol.* 99. 1.
Abispa splendida, *Sauss. Mon. Guêpes Sol. Supp.* 169. t. 15. f. 8.
Hab. Australia; Tasmania.

Genus 14. RHYNCHIUM.

Vespa, pt., *Fabr. Ent. Syst.* ii. 265 (1793).
Polistes, pt., *Fabr. Syst. Piez.* 273 (1804).
Rygchium, *Spin. Ins. Ligur.* i. (1806).
Odynerus, pt., *Guér. Voy. Ind. Or. de Bélanger, Zool.* 503 (1834).
Rhynchium, *Sauss. Mon. Guêpes Sol. Supp.* 170 (1854–56).
Ancistrocerus, pt., *Smith, Trans. Ent. Soc. Supp.* n. s. ii. 36.

DIV. I.—*Species of Europe.*

1. RHYNCHIUM OCULATUM. B.M

Vespa oculata, *Fabr. Spec. Ins.* i. 463; *Mant. Ins.* i. 289. 35; *Ent. Syst.* ii. 265. 43.
Oliv. Encycl. Méth. vi. 685.
Rossi, Faun. Etrus. ii. 85.
Villers, Ent. iii. 235. 21.
Rygchium Europeum, *Spin. Ins. Lig.* i. 86.
Latr. Gen. Crust. et Ins. iv. 139.
St. Farg. Hym. ii. 680. 2.
Sauss. Mon. Guêpes Sol. 107. 8.
Rygchium Lefevrei, *St. Farg. Hym.* ii. 679. 1 (var.).
Hab. Central Europe; Italy; Algeria.

DIV. II.—*Species of India and China.*

2. RHYNCHIUM NITIDULUM. B.M.

Vespa nitidula, *Fabr. Ent. Syst. Suppl.* 262. 44; *Syst. Piez.* 260. 35.
Rygchium nitidulum, *Sauss. Mon. Guêpes Sol.* 105. 5.
Hab. India.

3. Rhynchium Bengalense.

Rhynchium Bengalense, *Sauss. Mon. Guêpes Sol. Supp.* 167. 66. t. 9. f. 8.

Hab. Bengal.

4. Rhynchium atrum. B.M.

Rygchium atrum, *Sauss. Mon. Guêpes Sol.* 109. 11.

Hab. India.

5. Rhynchium hæmorrhoidale. B.M.

Vespa hæmorrhoidalis, *Fabr. Syst. Ent.* 366. 12; *Spec. Ins.* i. 463; *Mant. Ins.* i. 289. 29; *Ent. Syst.* ii. 263. 36; *Syst. Piez.* 259. 28.
Oliv. Encycl. Méth. vi. 683.
Christ. Hym. 242.
Odynerus dimidiatus, *Guér. Voy. aux Ind. Or. de Bélanger, Zool.* 503. t. 4. f. 4.
Rygchium hæmorrhoidale, *Sauss. Mon. Guêpes Sol.* 109. 12.
Rygchium parentissimum, *Sauss. Mon. Guêpes Sol.* 111. 14.

Hab. India; Java; Cape of Good Hope.

6. Rhynchium sanguineum.

Rygchium sanguineum, *Sauss. Mon. Guêpes Sol.* 110. 13.

Hab. Java.

7. Rhynchium brunneum. B.M.

Vespa quinquecincta, *Fabr. Ent. Syst.* ii. 261; *Syst. Piez.* 288. 23.
Oliv. Encycl. Méth. Ins. vi. 682. 63.
Vespa brunnea, *Fabr. Ent. Syst.* ii. 264. 41; *Syst. Piez.* 260. 33.
Odynerus brunneus, *Latr. Gen. Crust. et Ins.* iv. 136. t. 14. f. 3.
Rygchium brunneum, *Sauss. Mon. Guêpes Sol.* 112. 16. t. 14. f. 4.

Hab. Bengal.

8. Rhynchium Carnaticum. B.M.

Vespa carnatica, *Fabr. Ent. Syst. Supp.* 261; *Syst. Piez.* 258. 22.
Rygchium carnaticum, *Sauss. Mon. Guêpes Sol.* 112. 17 (var. R. brunneum?).

Hab. Bengal.

9. RHYNCHIUM METALLICUM. B.M.

Rygchium metallicum, *Sauss. Mon. Guêpes Sol.* 114. 21. t. 14. f. 8.

Hab. India (Madras).

10. RHYNCHIUM ARGENTATUM. B.M.

Vespa argentata, *Fabr. Syst. Piez.* 260. 39.
Rygchium argentatum, *Sauss. Mon. Guêpes Sol.* 115. 22.

Hab. India.

11. RHYNCHIUM MELLYI.

Rygchium Mellyi, *Sauss. Mon. Guêpes Sol.* 116. 24.

Hab. India; China.

12. RHYNCHIUM DICHOTOMUM.

Rygchium dichotomum, *Sauss. Mon. Guêpes Sol.* 116. 25.

Hab. India.

13. RHYNCHIUM MANDARINIUM.

Rhynchium mandarinium, *Sauss. Mon. Guêpes Sol. Supp.* 180. 73.

Hab. China.

14. RHYNCHIUM FLAVOPUNCTATUM.

Ancistrocerus flavopunctatus, *Smith, Trans. Ent. Soc. Supp.* new ser. ii. 36. t. 9. f. 7.

Hab. China (Teing-Tung).

15. RHYNCHIUM FLAVOMARGINATUM. B.M.

Rhynchium flavomarginatum, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 35.
Sauss. Mon. Guêpes Sol. Supp. 177. 68. t. 9. f. 7.

Hab. China.

16. RHYNCHIUM SMITHII.

Rhynchium Smithii, *Sauss. Mon. Guêpes Sol. Supp.* 174. 62.

Hab. China.

17. RHYNCHIUM ORNATUM. B.M.

Rhynchium ornatum, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. ii. t. 8. f. 10.
Sauss. Mon. Guêpes Sol. Supp. 173. 61.

Hab. China.

Div. III.—*Species of Africa.*

18. Rhynchium bioculatum. B.M.

Rhynchium bioculatum, *Sauss. Mon. Guêpes Sol. Supp.* 183. 78.
Rygchium auro-maculatum, *Sauss. Mon. Guêpes Sol.* 104. 4?
Hab. Africa.

19. Rhynchium Sichelii.

Rhynchium Sichelii, *Sauss. Mon. Guêpes Sol. Supp.* 176. 65.
Hab. Africa.

20. Rhynchium laterale. B.M.

Vespa lateralis, *Fabr. Spec. Ins.* i. 466; *Mant.* i. 29. 2; *Ent. Syst.* ii. 275. 77.
Polistes lateralis, *Fabr. Syst. Piez.* 233. 22.
Vespa marginella, *Fabr. Ent. Syst.* ii. 263. 34; *Syst. Piez.* 259. 26.
Vespa Africanum, *Fabr. Syst. Piez.* 257. 19.
Rygchium Africanum, *Sauss. Mon. Guêpes Sol.* 108. 10.
Rhynchium laterale, *Sauss. Mon. Guêpes Sol. Supp.* 171. t. 14. f. 3.
Hab. Africa.

21. Rhynchium dimidiatum.

Odynerus dimidiatus, *Spin. Ann. Soc. Ent. Fr.* vii. 502.
Rhynchium dimidiatum, *Sauss. Mon. Guêpes Sol. Supp.* 182. 76.
Hab. Africa.

22. Rhynchium fallax. B.M.

Rhynchium fallax, *Sauss. Mon. Guêpes Sol. Supp.* 175. 63.
Hab. North Africa.

23. Rhynchium rubens.

Rhynchium rubens, *Sauss. Mon. Guêpes Sol. Supp.* 181. 75.
Hab. Cape of Good Hope.

24. Rhynchium xanthurum.

Rhynchium xanthurum, *Sauss. Mon. Guêpes Sol. Supp.* 182. 77.
Hab. Cape of Good Hope.

25. Rhynchium synagroides. B.M.

Rygchium synagroides, *Sauss. Mon. Guêpes Sol.* 103. 1. t. 14. f. 2 ♂.
Hab. Tropical Africa.

26. RHYNCHIUM AURO-MACULATUM. B.M.

Rygchium auro-maculatum, *Sauss. Mon. Guêpes Sol.* 104. 4. t. 14. f. 1.

Hab. Senegal; Java. (Coll. F. Smith.)

27. RHYNCHIUM CYANOPTERUM. B.M.

Rygchium cyanopterum, *Sauss. Mon. Guêpes Sol.* 108. 9. *Savig. Descr. Egypt. Hym.* t. 9. f. 9.

Hab. Senegal; Egypt.

28. RHYNCHIUM SABULOSUM. B.M.

Rhynchium sabulosum, *Sauss. Mon. Guêpes Sol. Supp.* 179. 70.

Hab. Senegal.

29. RHYNCHIUM ARDENS.

Odynerus ardens, *Guér. Voy. en Abyss. de Lefeb.* 362. t. 8. f. 9.
Rygchium ardens, *Sauss. Mon. Guêpes Sol.* 104. 3 ♂.

Hab. Abyssinia.

30. RHYNCHIUM NILOTICUM.

Rhynchium niloticum, *Sauss. Mon. Guêpes Sol. Supp.* 181. 74.

Hab. Abyssinia.

31. RHYNCHIUM ABYSSINICUM. B.M.

Rygchium Abyssinicum, *Sauss. Mon. Guêpes Sol.* 103. 2 ♀.

Hab. Abyssinia.

32. RHYNCHIUM GRAYI. B.M.

Rhynchium Grayi, *Sauss. Mon. Guêpes Sol. Supp.* 175. 64.

Hab. Port Natal.

33. RHYNCHIUM MULTISPINOSUM.

Rhynchium multispinosum, *Sauss. Mon. Guêpes Sol. Supp.* 177. 67.

Hab. Port Natal.

34. RHYNCHIUM RADIALE. B.M.

Rhynchium radiale, *Sauss. Mon. Guêpes Sol. Supp.* 179. 71.

Hab. Port Natal.

Div. IV.—*Species of Madagascar and New Guinea.*

35. Rhynchium Madegasse.

Rygchium Madegasse, *Sauss. Mon. Guêpes Sol.* 111. 15 ♀.

Hab. Madagascar.

36. Rhynchium transversum. B.M.

Vespa abdominalis, *Illig. Mag. F. Ins.* (1801) 192.
Vespa transversa, *Fabr. Syst. Piez.* 257. 16.
Rygchium transversum, *Sauss. Mon. Guêpes Sol.* 117. 26. t. 14. f. 7 ♀.
Rygchium dichotomum, *Sauss. Mon. Guêpes Sol.* 116. 25. t. 14. f. 7?

Hab. Madagascar.

37. Rhynchium limbatum.

Rygchium limbatum, *Sauss. Mon. Guêpes Sol.* 117. 27. t. 13. f. 9.

Hab. Madagascar.

38. Rhynchium zonale.

Rygchium zonale, *Sauss. Mon. Guêpes Sol.* 113. 19.

Hab. New Guinea.

39. Rhynchium annuliferum.

Rygchium annuliferum, *Boisd. Voy. de l'Astrol.* vi. 654.
Sauss. Mon. Guêpes Sol. 118.

Hab. New Guinea (Carteret Harbour).

40. Rhynchium rufipes. B.M.

Vespa rufipes, *Fabr. Syst. Ent.* 367. 23; *Spec. Ins.* i. 463; *Mant. Ins.* i. 289. 33; *Ent. Syst.* ii. 264. 40; *Syst. Piez.* 259. 32.
Christ. Hym. 240.
Oliv. Encycl. Méth. vi. 685.
Odynerus rufipes, *Guér. Voy. de la Coq. Ins.* 265.
Rygchium rufipes, *Sauss. Mon. Guêpes Sol.* 115. 23.

Hab. Otaheite; New Guinea.

Div. V.—*Species of Australia and Tasmania.*

41. Rhynchium decoratum.

Rhynchium decoratum, *Sauss. Mon. Guêpes Sol. Supp.* 180. 72. t. 9. f. 6.

Hab. New Holland.

42. RHYNCHIUM ALECTO.

Odynerus Alecto, *St. Farg. Hym.* ii. 647. 32.
Rhynchium Alecto, *Sauss. Mon. Guêpes Sol.* 114. 20.
Hab. New Holland.

43. RHYNCHIUM SUPERBUM.

Rhynchium superbum, *Sauss. Mon. Guêpes Sol.* 113. 18 ♀.
Hab. New Holland.

44. RHYNCHIUM MIRABILE.

Rhynchium mirabile, *Sauss. Mon. Guêpes Sol.* 106. 6. t. 14. f. 5.
Hab. Tasmania.

DIV. VI.—*Species of North America.*

45. RHYNCHIUM DORSALE. B.M.

Vespa dorsalis, *Fabr. Syst. Ent.* 367. 25; *Ent. Syst.* ii. 265. 44.
Oliv. Encycl. Méth. vi. 685. 81.
Polistes dorsalis, *Fabr. Syst. Piez.* 273. 19.
Rhynchium balteatum, *Say, Bost. Journ. Nat. Hist.* i. 383. 1. (1837).
Rhynchium Louisianum, *Sauss. Mon. Guêpes Sol.* 171. t. 13. f. 10.
Hab. United States.

Genus 15. ODYNERUS.

Vespa, pt., *Linn. Syst. Nat.* i. 948 (1766).
Epipone, *Latr. Hist. Nat. Ins.* (1804).
Odynerus, *Latr. Hist. Nat. Ins.* (1804).
Symmorphus, *Wesm. Mon. Odyn. Belg.* (1833).
Oplopus, *Wesm. Mon. Odyn. Belg.* (1833).
Ancistrocerus, *Wesm. Mon. Odyn. Belg.* (1833).
Pterochilus, pt., *Herr.-Schæff. Faun. Germ.* 173.

DIV. I.—*Species of Europe.*

1. ODYNERUS CRASSICORNIS. B.M.

Vespa muraria, *Scop. Ent. Carn.* 828.
Vespa parietum, *Fabr. Ent. Syst.* ii. 265. 45; *Syst. Piez.* 261. 44.
Schrank, Faun. Boic. 253. 2208.
Odynerus parietum, *Latr. Hist. Nat. Ins.* xiii. 347.
Spin. Ins. Lig. ii. 180.
Schrank, Faun. Boic. ii. 253. 2208.

Vespa crassicornis, *Panz. Faun. Germ.* 53. 8.
Schæff. Icon. Ins. Ratisb. t. 24. f. 3.
Vespa bipunctata, *Villers, Ent.* iii. 24.
Odynerus crassicornis, *Wesm. Mon. Belg.* 39. 8.
St. Farg. Hym. ii. 663. 41.
Sauss. Mon. Guêpes Sol. 123. 1, *&* *Supp.* 117. 79. t. 10. f. 2.
Symmorphus crassicornis, *Wesm. Mon. Odyn. Belg. Supp.* 2. 8.
Hab. Europe.

2. ODYNERUS MURARIUS. B.M.

Vespa muraria, *Linn. Faun. Suec.* 1674; *Syst. Nat.* i. 950. 8; *&* *Cab. Mus. Linn. Soc.*
Gmel. Ed. Linn. i. 2751. 8.
Odynerus murarius, *Sauss. Mon. Guêpes Sol. Supp.* 188. 80. t 10. f. 1.
Hab. Scandinavia.

3. ODYNERUS NIDULATOR.

Odynerus nidulator, *Sauss. Mon. Guêpes Sol. Supp.* 189. 31.
Hab. South of Europe.

4. ODYNERUS ARCTICUS.

Odynerus arcticus, *Sauss. Mon. Guêpes Sol. Supp.* 189. 82.
Hab. Sweden.

5. ODYNERUS SUECICUS.

Odynerus Suecicus, *Sauss. Mon. Guêpes Sol. Supp.* 190. 83. t. 10. f. 3 ♀.
Hab. Sweden.

6. ODYNERUS ALLOBROGUS.

Odynerus allobrogus, *Sauss. Mon. Guêpes Sol. Supp.* 190. 84. t. 10. f. 4 ♀.
Hab. Mountains of Savoy.

7. ODYNERUS GRACILIS. B.M.

Odynerus gracilis, *Brullé, Expéd. Sc. de Morée, Ins.* iii. t. 50. f. 3.
Odynerus elegans, *Wesm. Mon. Odyn. Belg.* 42. 7.
St. Farg. Hym. ii. 664. 13.
Herr.-Schæff. Faun. Germ. 154. 17.
Sauss. Mon. Guêpes Sol. 124. 2.
Hab. Europe.

8. ODYNERUS HERRICHIANUS.

Odynerus Herrichianus, *Sauss. Mon. Guêpes Sol. Supp.* 191. 85.

Hab. Germany.

9. ODYNERUS SINUATUS. B.M.

Vespa sinuata, *Fabr. Ent. Syst.* ii. 270; *Syst. Piez.* 264. 61.
Odynerus bifasciatus, *Spin. Ins. Lig.* i. 184.
Wesm. Mon. Odyn. Belg. 45. 8.
St. Farg. Hym. ii. 665. 44.
Sauss. Mon. Guêpes Sol. 124. 3.
Symmorphus bifasciatus, *Wesm. Mon. Odyn. Belg. Supp.* 2. 10.
Odynerus connexus, *Curtis, Brit. Ent.* iii. t. 138.
Odynerus sinuatus, *Sauss. Mon. Guêpes Sol. Supp.* 192. 86.

Hab. Europe.

10. ODYNERUS BIFASCIATUS. B.M.

Vespa bifasciata, *Linn. Faun. Suec.* 1683; *Syst. Nat.* i. 950. 14.
Fabr. Ent. Syst. ii. 269. 60; *Syst. Piez.* 264. 59.
Christ. Hym. 234.
Oliv. Encycl. Méth. vi. 687.
Villers, Entom. iii. 270. 11.
Gmel. Ed. Linn. i. 2757. 14.
Muell. Ins. ii. 883. 14.
Odynerus bifasciatus, *Zett. Ins. Lapp.* 457. 6.
Sauss. Mon. Guêpes Sol. Supp. 193. 87. t. 10. f. 5.

Hab. North of Europe.

11. ODYNERUS DEBILITATUS.

Odynerus debilitatus, *Sauss. Mon. Guêpes Sol. Supp.* 194. 88.

Hab. Geneva

12. ODYNERUS FUSCIPES. B.M.

Odynerus fuscipes, *Herr.-Schæff. Faun. Germ.* 154. 18.

Hab. Germany.

13. ODYNERUS ELEGANS.

Odynerus elegans, *Herr.-Schæff. Faun. Germ.* 154. t. 17.
Sauss. Mon. Guêpes Sol. 125. 4.

Hab. Bavaria.

14. ODYNERUS TRIPHALERATUS.

Odynerus triphaleratus, *Sauss. Mon. Guêpes Sol. Supp.* 200.
Odynerus trifasciatus, *St. Farg. Hym.* ii. 653. 36.

Hab. Europe.

15. ODYNERUS PARIETUM. B.M.

Vespa parietum, *Linn. Faun. Suec.* 1673; *Syst. Nat.* i. 949.
Rossi, Faun. Etrus. ii. 141.
Oliv. Encycl. Méth. vi. 686.
Christ. Hym. 287?
Vespa parietina, *Linn. Faun. Suec.* 1679?
Vespa sexfasciata, *Rossi, Faun. Etrus.* ii. 144.
Schrank, Faun. Boic. ii. 356.
Fabr. Ent. Syst. ii. 268; *Syst. Piez.* 263.
Vespa squamiger, *Fabr. Syst. Piez.* 267. 73.
Vespa sexcincta, *Schrank, Faun. Boic.* ii. 356.
Vespa quadrata, *Panz. Faun. Germ.* 63. 3.
Vespa aucta, *Panz. Faun. Germ.* 81. 17.
Fabr. Ent. Syst. ii. 272; *Syst. Piez.* 267.
Vespa emarginata, *Fabr. Ent. Syst.* ii. 267. 51; *Syst. Piez.* 263. 50?
Vespa trifasciata, *Oliv. Encycl. Méth.* vi. 688.
Vespa æneipennis, *Christ. Hym.* 245. t. 23. f. 3.
Odynerus parietum, *Wesm. Mon. Odyn. Belg.* p. 16, *Supp.* p. 4.
Zett. Ins. Lapp. 455. 1.
St. Farg. Hym. ii. 656.
Sauss. Mon. Guêpes Sol. 130. 10. p. 11. f. 4.
Odynerus affinis, *Herr.-Schæff. Faun. Germ.* 173. 21, & t. 24. var. 1.
Odynerus auctus, *Herr.-Schæff. Faun. Germ.* 173. 22.
Odynerus murarius, *Blanch. Règ. An. Illustr. Ins.* t. 124. f. 3.

Hab. Europe.

16. ODYNERUS OVIVENTRIS.

Odynerus oviventris, *Wesm. Mon. Odyn. Belg. Supp.* 2.
St. Farg. Hym. ii. 651. 35.
Sauss. Mon. Guêpes Sol. 132. 12

Hab. Belgium, &c.

17. ODYNERUS ANTILOPE. B.M.

Vespa antilope, *Panz. Faun. Germ.* 53. 9.
Vespa parietina, *Panz. Faun. Germ.* 49. 24.
Fabr. Ent. Syst. ii. 268. 53; *Syst. Piez.* 263. 52.
Odynerus biglumis, *Spin. Ins. Lig.* i. 89. & fasc. iii. 186. 4.

Odynerus Antilope, *Wesm. Mon. Odyn. Belg.* 32.
St. Farg. Hym. ii. 649. 34.
Odynerus murarius, *Herr.-Schæff. Faun. Germ.* 173. 26. t. 12. 1 ♀.

Hab. Europe.

18. ODYNERUS GAZELLA.

Vespa gazella, *Panz. Faun. Germ.* 53. 10.
Odynerus gazella, *Herr.-Schæff. Faun. Germ.* 173. 27. 176. 4 ♂, 14 ♀.

Hab. Germany.

19. ODYNERUS VIDUUS.

Odynerus viduus, *Herr.-Schæff. Faun. Germ.* 173. 28, 176. 16.
Sauss. Mon. Guêpes Sol. Supp. 210.

Hab. Germany.

20. ODYNERUS PICTUS. B.M.

Odynerus pictus, *Curtis, Brit. Ent.* iii. 138.
Sauss. Mon. Guêpes Sol. Supp. 210. t. 10. f. 10.
Odynerus constans, *Herr.-Schæff. Faun. Germ.* 173. 29.
Ancistrocerus pictus, *Smith, Cat. Brit. Hym.* 46. 6.

Hab. Britain; Scandinavia.

21. ODYNERUS TRIFASCIATUS. B.M.

Vespa trifasciata, *Fabr. Syst. Piez.* 264. 60.
Oliv. Encycl. Méth. vi. 688.
Vespa quadricincta, *Fabr. Syst. Piez.* 262. 46.
Vespa yuncea, *Christ. Hym.* 245. t. 23. f. 8.
Odynerus trifasciatus, *Spin. Ins. Lig.* ii. 184.
Wesm. Mon. Odyn. Belg. 7.
Smith, Cat. Brit. Hym. 46. 4.
Sauss. Mon. Guêpes Sol. Supp. 211. 100.
Odynerus tricinctus, *Herr.-Schæff. Faun. Germ.* 173. p. 20. 176. t. 10 ♀.

Hab. Europe.

22. ODYNERUS TRIMARGINATUS. B.M.

Odynerus trimarginatus, *Zett. Ins. Lapp.* 456. 4.
Sauss. Mon. Guêpes Sol. Supp. 212. t. 10. f. 9.
Odynerus Scoticus, *Curtis, Brit. Ent.* iii. 138?
Ancistrocerus trimarginatus, *Smith, Cat. Brit. Hym.* 46. 5.
Odynerus 4-cinctus, *Herr.-Schæff. Faun. Germ.* 173. 24, 176. 15.

Hab. North of Europe.

23. ODYNERUS INTERMEDIUS.

Odynerus intermedius, *Sauss. Mon. Guêpes Sol.* 155. 39.

Hab. France; Algeria; Greece.

24. ODYNERUS NIGRIPES.

Odynerus nigripes, *Herr.-Schæff. Faun. Germ.* 176. 17?
Sauss. Mon. Guêpes Sol. 190. 87.
Odynerus maculatus, *St. Farg. Hym.* ii. 626. 14.

Hab. France; Germany.

25. ODYNERUS GRAPHICUS. B.M.

Odynerus graphicus, *Sauss. Mon. Guêpes Sol.* 191. 88.

Hab. France.

26. ODYNERUS DANTICI. B.M.

Vespa Dantici, *Rossi, Faun. Etrus.* ii. 89. t. 6. f. 6.
Odynerus post-scutellatus, *St. Farg. Hym.* ii. 627. 15.
Lucas, Explo. Sc. Algér. Ins. iii. 234. t. 11. f. 8.
Herr.-Schæff. Faun. Germ. 173. 14. t. 23.
Odynerus fastidiosus, *Sauss. Mon. Guêpes Sol.* 189. 85; *Supp.* 236.

Hab. France; Italy.

27. ODYNERUS DUBIUS.

Odynerus dubius, *Sauss. Mon. Guêpes Sol.* 193. 92 (var. O. parvulus?).

Hab. France.

28. ODYNERUS SIMPLEX. B.M.

Vespa simplex, *Fabr. Ent. Syst.* ii. 267. 52; *Syst. Piez.* 263. 51.
Vespa quadrifasciata, *Fabr. Syst. Piez.* 262. 47.
Odynerus trifasciatus, *Spin. Ins. Lig.* ii. 184.
Odynerus 4-fasciatus, *Herr.-Schæff. Faun. Germ.* 173. p. 19. t. 29 ♀.
Odynerus Lindenii, *St. Farg. Hym.* ii. 624. 13.
Sauss. Mon. Guêpes Sol. 194. 93.

Hab. Europe.

29. ODYNERUS SESSILIS.

Odynerus sessilis, *Sauss. Mon. Guêpes Sol.* 197. 98.

Hab. Spain.

30. ODYNERUS ROSSII. B.M.

Odynerus Rossii, *St. Farg. Hym.* ii. 633. 19.
Sauss. Mon. Guêpes Sol. 207. 111.
Odynerus Lindenii, *Mon. Guêpes Sol.* 194.
Hab. Europe.

31. ODYNERUS FAIRMAIRI.

Odynerus Fairmairi, *Sauss. Mon. Guêpes Sol.* 216. 123.
Hab. Spain.

32. ODYNERUS VULNERATUS.

Odynerus vulneratus, *Sauss. Mon. Guêpes Sol. Supp.* 248. 122.
Hab. Spain; Cape of Good Hope.

33. ODYNERUS EGREGIUS.

Odynerus egregius, *Herr.-Schæff. Faun. Germ.* 173. p. 15, 176. t. 2.
Sauss. Mon. Guêpes Sol. Supp. 262. 141.
Hab. Spain and Italy.

34. ODYNERUS NOTATUS.

Odynerus notatus, *Jurine, Hym.* t. 9. f. 15.
Sauss. Mon. Guêpes Sol. Supp. 262. 142.
Hab. Europe.

35. ODYNERUS GERMANICUS.

Odynerus germanicus, *Sauss. Mon. Guêpes Sol. Supp.* 266. 146.
Hab. Germany.

36. ODYNERUS MINUTUS.

Vespa minuta, *Fabr. Ent. Syst. Supp.* 262. 65; *Syst. Piez.* 268. 78.
Odynerus minutus, *St. Farg. Hym.* ii. 632.
Sauss. Mon. Guêpes Sol. 207. 110.
Odynerus pictus, *Herr.-Schæff. Faun. Germ.* 173. p. 30, 176. t. 3 ♀, ♂ *d* ♂.
Hab. Europe.

37. ODYNERUS CHEVRIERANUS.

Odynerus Chevrieranus, *Sauss. Mon. Guêpes Sol. Supp.* 268. 148. t. 13. f. 2.
Hab. Geneva.

38. Odynerus Dufourianus.

Odynerus Dufourianus, *Sauss. Mon. Guêpes Sol. Supp.* 269. 149.
Hab. France.

39. Odynerus Jurinei.

Odynerus Jurinei, *Sauss. Mon. Guêpes Sol. Supp.* 270. 150.
Hab. France.

40. Odynerus Parisiensis.

Odynerus Parisiensis, *Sauss. Mon. Guêpes Sol. Supp.* 271. 151. t. 13. f. 5.
Hab. Paris.

41. Odynerus xanthomelas.

Odynerus xanthomelas, *Herr.-Schæff. Faun. Germ.* 173. p. 29, 176. t. 7 ♀, 8 *a* ♂.
Sauss. Mon. Guêpes Sol. Supp. 271. 152.
Hab. Germany.

42. Odynerus alpestris.

Odynerus alpestris, *Herr.-Schæff. Faun. Germ.* 173. p. 31, 176. t. 6 ♀, 8 *b* ♂.
Sauss. Mon. Guêpes Sol. Supp. 272. 153. t. 13. f. 3.
Hab. Germany.

43. Odynerus Gallicus.

Odynerus Gallicus, *Sauss. Mon. Guêpes Sol. Supp.* 273. 154.
Hab. France (Aix; Provence).

44. Odynerus lativentris.

Odynerus lativentris, *Sauss. Mon. Guêpes Sol. Supp.* 275. 156.
Hab. France (Montpellier).

45. Odynerus orbitalis.

Odynerus orbitalis, *Herr.-Schæff. Faun. Germ.* 173. 15.
Sauss. Mon. Guêpes Sol. Supp. 277. 158.
Hab. Austria.

46. Odynerus Reaumurii.

Odynerus Reaumurii, *Dufour, Ann. Sc. Nat.* 2nd ser. xi. 90.
Sauss. Mon. Guêpes Sol. 222. 130.
Odynerus Dufourii, *St. Farg. Hym.* ii. 642. 27.
Hab. France.

47. ODYNERUS SPINIPES. B.M.

Vespa spinipes, *Linn. Faun. Suec.* 1682; *Syst. Nat.* i. 950. 10.
Fabr. Syst. Ent. 368. 28; *Ent. Syst.* ii. 268. 55; *Syst. Piez.* 263. 54.
Rossi, Faun. Etrus. ii. 86. 868.
Panz. Faun. Germ. 17. 18.
Guêpe solitaire, *Reaum. Ins.* vi. *Mém.* 8. 251. t. 26. f. 2.
Vespa murária, *Christ. Hym.* 233.
Odynerus spinipes, *Spin. Ins. Lig.* i. 89. 3.
Latr. Hist. Nat. xiii.
Wesm. Mon. Odyn. Belg. 6. 2.
St. Farg. Hym. ii. 608. 2.
Sauss. Mon. Guêpes Sol. 223. 131.
Pterochilus spinipes, *Herr.-Schæff. Faun. Germ.* 173. 16–18.

Hab. Europe.

48. ODYNERUS MELANOCEPHALUS. B.M.

Vespa melanocephala, *Gmel. Ed. Syst. Nat.* i. 2760. 96 ♀.
Vespa albofasciata, *Rossi, Faun. Etrus.* ii. 143. 870.
Vespa spinipes, *Oliv. Encycl. Méth.* vi. 687. 87 ♂.
Odynerus melanocephalus, *Wesm. Mon. Odyn. Belg.* 12. 3.
Sauss. Mon. Guêpes Sol. 224. 132.
St. Farg. Hym. ii. 610. 3.
Pterochilus dentipes, *Herr.-Schæff. Faun. Germ.* 173. 3 ♀.
Pterochilus tinniens, *Herr.-Schæff. Faun. Germ.* 6. t. 16 ♂.
Oplopus melanocephalus, *Wesm. Odyn. Belg. Supp.* 2. 3.

Hab. Europe.

49. ODYNERUS RENIFORMIS. B.M.

Vespa reniformis, *Gmel. Ed. Syst. Nat.* i. 2760. 94 ♀.
Vespa melanochra, *Gmel. Ed. Syst. Nat.* i. 2760. 95 ♂?
Odynerus auctus, *Spin. Ins. Lig.* i. 88. 1 & fasc. 3. 185. 1 ♂.
Odynerus reniformis, *Wesm. Mon. Odyn. Belg.* 1.
St. Farg. Hym. ii. 606. 1 (♂ only).
Sauss. Mon. Guêpes Sol. 226. 135. t. 20. f. 1.
Pterochilus coxalis, *Herr.-Schæff. Faun. Germ.* 173. 6. t. 17 ♂.

Hab. France; Belgium.

50. ODYNERUS LÆVIPES. B.M.

Odynerus lævipes, *Shuck. Loud. Mag. Nat. Hist.* new ser. i. 490.
Sauss. Mon. Guêpes Sol. 228. 137.
Odynerus rubicola, *Dufour, Ann. Sc. Nat.* 2nd ser. xi. 102.
Odynerus reniformis, *St. Farg. Hym.* ii. 606 (♀ only).

Hab. Europe.

51. Odynerus basalis. B.M.

Female. Length 5–5½ lines.—Black: the head and thorax strongly punctured; the base of the clypeus, a spot between the antennæ, and an oblong one behind the eyes, yellow; the scape in front and a narrow line at the inner orbit of the eyes, terminating at their emargination, ferruginous. The prothorax anteriorly, a spot beneath the wings, the tegulæ, an interrupted line on the apical margin of the scutellum, and the post-scutellum, yellow; the metathorax truncate, with a ferruginous spot on each side, in the shape of a comma; the legs ferruginous, with the coxæ and trochanters ferruginous; the wings hyaline, the anterior margin of the superior pair ferruginous, the nervures ferruginous at the base and brown towards the apex of the wings. Abdomen closely and finely punctured; the basal segment ferruginous; the apical margin of the segments with a yellow band, that on the second and two following segments widened laterally; a black subtriangular spot in the middle of the basal segment above; beneath, the second segment with a narrow yellow band on its apical margin, and having on each side, as well as the two following segments, an angular yellow spot.

Hab. Polish Ukraine.

Div. II.—*Species of Asia.*

52. Odynerus Ionius.

Odynerus Ionius, *Sauss. Mon. Guêpes Sol. Supp.* 263. 143.

Hab. Rhodes.

53. Odynerus Bohemani.

Odynerus Bohemani, *Sauss. Mon. Guêpes Sol. Supp.* 264. 144. t. 12. f. 6.

Hab. Rhodes; Ionian Islands.

54. Odynerus Rhodensis.

Odynerus Rhodensis, *Sauss. Mon. Guêpes Sol. Supp.* 208. 96. t. 10. f. 7, 7 *a* ♀.

Hab. Rhodes.

55. Odynerus Sichelii.

Odynerus Sichelii, *Sauss. Mon. Guêpes Sol. Supp.* 206. t. 10. f. 6.

Hab. India.

56. ODYNERUS PUNCTUM. B.M.

Odynerus punctum, *Sauss. Mon. Guêpes Sol.* 209. 114. t. 19. f. 2.
Hab. India.

57. ODYNERUS PUNCTATIPENNIS. B.M.

Odynerus punctatipennis, *Sauss. Mon. Guêpes Sol.* 210. 115.
Hab. Indiâ.

58. ODYNERUS OVALIS. B.M.

Odynerus ovalis, *Sauss. Mon. Guêpes Sol.* 215. 122. t. 19. f. 4.
Hab. India; China.

59. ODYNERUS DIFFINIS.

Odynerus diffinis, *Sauss. Mon. Guêpes Sol. Supp.* 274. 155. t. 14. f. 2 ♀.
Hab. India.

60. ODYNERUS INTRICATUS. B.M.

Male. Length 4½–5 lines.—Ferruginous: the head and thorax rugose; the clypeus deeply emarginate at the apex; the mandibles, clypeus and a spot above it, yellow; the apex of the mandibles ferruginous, their teeth black; a crown-shaped spot on the vertex, enclosing the stemmata; the prothorax in the middle anteriorly, and the tibiæ and basal joint of the tarsi, yellow outside; the wings fusco-hyaline, the superior pair with a darker cloud along the anterior margin, occupying and terminating at the marginal cell; the metathorax rounded, the post-scutellum bituberculate. Abdomen punctured, the punctures rather distant and slightly impressed on the disk of the first and second segments; on their margins and on the following segments the punctures are stronger; a band on the apical margin of the first segment, the sides and apical margin of the second segment, and the whole of the following segments, yellow; the inner border of the yellow margin at the sides of the second segment semicircular, and the inner border of the apical margin traversed by a black stain; beneath, the second segment with a black spot on each side, its apical margin bordered with yellow, which is produced in the middle into a quadrate shape; the third segment with a black spot on each side.

Hab. Bombay. (Coll. F. Smith.)

This species is probably the male of *O. punctatipennis*; if not, it is closely allied to it.

61. ODYNERUS FLAVO-LINEATUS. B.M.

Female. Length 6 lines.—Black: the clypeus and a spot above it, a spot in the emargination of the eyes and an abbreviated line behind, with the scape in front, yellow; the apex of the flagellum fulvous beneath; the head and thorax closely punctured. The prothorax anteriorly, a spot beneath the wings, the tegulæ and a spot behind them, two abbreviated lines on the mesothorax touching the base of the scutellum, the post-scutellum, and a large subovate spot on each side of the metathorax, yellow; a fuscous spot in the middle of the tegulæ; a spot on the intermediate and posterior coxæ, a broad stripe on the femora in front, not extending to their base, the tibiæ outside, and the claw-joint of the anterior tarsi, yellow; the claw-joint of the intermediate and posterior tarsi rufo-testaceous; wings subhyaline, the anterior and apical margins of the superior pair fuscous. Abdomen closely and finely punctured, the apex nearly glabrous; the apical margins of the segments with a narrow yellow band; beneath closely punctured; the apical margins of the segments narrowly and obsoletely banded with testaceous yellow.

Hab. Java.

62. ODYNERUS CONFLUENTUS. B.M.

Female. Length 5¼ lines.—Black: the head, thorax and abdomen covered with confluent punctures, which are elongate, and on the abdomen have a tendency to run into striæ. The scape in front, the clypeus and a spot above it, the emargination of the eyes and a broad stripe behind them, yellow; the flagellum beneath and the mandibles ferruginous. The prothorax in front, the mesothorax beneath the wings, two abbreviated lines on the disk of the mesothorax, the tegulæ, two ovate spots on the scutellum, the post-scutellum and the metathorax, yellow; the latter with a black stripe down the centre; the apical lateral angles of the metathorax acute; the legs yellow, the femora behind, the tips of the posterior tibiæ within and of the joints of the tarsi slightly ferruginous; the wings subhyaline, the costal cell and the apex of the anterior wings fuscous. Abdomen: the apical and lateral margins of the basal segment, a narrow band a little before the apical margins of the second and three following segments, yellow; beneath, the first and second segments yellow, the second with a narrow central black stripe; an interrupted yellow fascia on the apical margins of the three following segments.

Hab. Sumatra.

63. ODYNERUS RUFESCENS. B.M.

Female. Length 4½ lines.—Black: head and thorax strongly and closely punctured; the clypeus, labrum, scape in front and the face, reddish-yellow; a large black spot above each antenna and descending to the base of the clypeus; the antennæ and mandibles ferruginous, yellowish at their base; a broad orange stripe behind the eyes. The prothorax above, a spot beneath the wings, two longitudinal stripes on the mesothorax, the tegulæ, scutellum, post-scutellum, metathorax and legs, reddish-yellow; the tibiæ and femora paler outside, the margins of the scutellum and post-scutellum black; the metathorax truncate, rugose, and with a central longitudinal carina, the lateral margins of the truncation crenate; the wings fulvo-hyaline, with a fuscous cloud in the marginal cell. Abdomen: the first segment and the base of the second ferruginous; the apical margin of the first segment with a narrow yellow fascia, widest in the middle; the second and following segments with broad fasciæ, that on the second widest in the middle; beneath, ferruginous, a yellow fascia on the second segment, its anterior margin notched in the middle and emarginate on each side.

Hab. Ceram. (Coll. Madame Ida Pfeiffer.)

64. ODYNERUS FRAGILIS. B.M.

Male. Length 3¼ lines.—Black: the head, thorax and abdomen coarsely punctured; the clypeus and a spot above it, the scape in front, a spot in the emargination of the eyes, another behind them, and the mandibles, yellow; the tips of the latter ferruginous, with their teeth black; a black spot on the clypeus; the flagellum fulvous beneath. The thorax truncate in front, a large spot on each side of the anterior margin of the prothorax, a spot beneath the wings, the hinder margin of the tegulæ, a subinterrupted transverse line on the scutellum and a large ovate spot on each side of the metathorax, yellow; the apex of the anterior and intermediate femora in front, the tibiæ outside, and the anterior tarsi, yellow, the latter with ferruginous stains; the intermediate and posterior tarsi dusky. Abdomen subpetiolate; the basal segment very narrow, about half the width of the second, which has an ovate yellow spot on each side at its base; the apical margins of the first and second segments, and a transverse spot on the apical margins of the fifth and sixth segments, yellow; the second segment with a yellow band on its apical margin, its anterior edge waved.

Hab. Borneo.

65. ODYNERUS ATERRIMUS.

Odynerus aterrimus, *Sauss. Mon. Guêpes Sol.* 128. 7.

Hab. China.

66. ODYNERUS DYSCHERUS.

Odynerus dyscherus, *Sauss. Mon. Guêpes Sol.* 175. 66.

Hab. China.

67. ODYNERUS TRUNCATUS.

Odynerus truncatus, *Sauss. Mon. Guêpes Sol.* 175. 66.

Hab. China.

68. ODYNERUS NIGRIFRONS. B.M.

Female. Length 8 lines.—Black: the head and thorax covered with coarse confluent punctures; the clypeus very convex, rugose and slightly notched at the apex; the scape yellow in front. The prothorax with two minute yellow spots on its anterior margin; the truncation of the metathorax slightly concave and sculptured with curved transverse striæ; the tegulæ, the femora towards their apex and the claws ferruginous; wings smoky-hyaline, with a beautiful violet iridescence. Abdomen closely punctured, coarsely so towards the apex; the two basal segments with a narrow interrupted yellow fascia on their apical margins.

Hab. North China (Shanghai).

DIV. III.—*Species of Australia and Tasmania.*

69. ODYNERUS FLUVIALIS.

Odynerus fluvialis, *Sauss. Mon. Guêpes Sol. Supp.* 215. 106.

Hab. Australia.

70. ODYNERUS CRUENTUS.

Odynerus cruentus, *Sauss. Mon. Guêpes Sol. Supp.* 221. 115.

Hab. New Holland.

71. ODYNERUS SANGUINOLENTUS. B.M.

Odynerus sanguinolentus, *Sauss. Mon. Guêpes Sol. Supp.* 221. 116.

Hab. New Holland.

72. ODYNERUS SUBALARIS.

Odynerus subalaris, *Sauss. Mon. Guêpes Sol. Supp.* 280. 162. t. 14. f. 5.

Hab. New Holland.

73. ODYNERUS SUCCINCTUS.

Odynerus succinctus, *Sauss. Mon. Guêpes Sol.* 204. 107.

Hab. New Holland; Tasmania.

74. ODYNERUS CALEDONICUS.

Odynerus Caledonicus, *Sauss. Mon. Guêpes Sol.* 205. 108.

Hab. New Caledonia.

75. ODYNERUS NEGLECTUS. B.M.

Odynerus neglectus, *Sauss. Mon. Guêpes Sol. Supp.* 245. 118.

Hab. New Holland.

76. ODYNERUS BICINCTUS.

Vespa bicincta, *Fabr. Ent. Syst.* ii. 271. 65; *Syst. Piez.* 265. *St. Farg. Hym.* ii. 644. *Sauss. Mon. Guêpes Sol. Supp.* 224.

Odynerus bizonatus, *Boisd. Voy. de l'Astrol. Entom.* 459 ♂. *Sauss. Mon. Guêpes Sol.* 156. 40.

Hab. New Holland; Isles of the Pacific; Cape of Good Hope.

77. ODYNERUS SAUCIUS.

Odynerus saucius, *Sauss. Mon. Guêpes Sol. Supp.* 280. 163.

Hab. New Holland.

78. ODYNERUS BICOLORATUS. B.M.

Odynerus bicoloratus, *Sauss. Mon. Guêpes Sol. Supp.* 281. 164.

Hab. New Holland. (Coll. J. S. Baly, Esq.)

79. ODYNERUS ALARIFORMIS.

Odynerus alariformis, *Sauss. Mon. Guêpes Sol. Supp.* 282. 165. t. 14. f. 6.

Hab. New Holland.

80. ODYNERUS FLAMMIGER.

Odynerus flammiger, *Sauss. Mon. Guêpes Sol. Supp.* 282. 166.

Hab. New South Wales.

81. ODYNERUS BALYI.

Odynerus Balyi, *Sauss. Mon. Guêpes Sol. Supp.* 283. 167. t. 14. f. 6.

Hab. New Holland.

82. ODYNERUS ANGULATUS. B.M.

Odynerus angulatus, *Sauss. Mon. Guêpes Sol. Supp.* 284. 168. t. 14. f. 7.

Hab. New Holland.

83. ODYNERUS BICOLOR. B.M.

Odynerus bicolor, *Sauss. Mon. Guêpes Sol. Supp.* 284. 169.

Hab. New Holland (Macintyre River).

84. ODYNERUS TRIANGULUM.

Odynerus triangulum, *Sauss. Mon. Guêpes Sol. Supp.* 285. 170. t. 14. f. 8.

Hab. Australia.

85. ODYNERUS METATHORACICUS.

Odynerus metathoracicus, *Sauss. Mon. Guêpes Sol. Supp.* 286. 171.

Hab. New Holland.

86. ODYNERUS PUSILLUS.

Odynerus pusillus, *Sauss. Mon. Guêpes Sol. Supp.* 287. 172.

Hab. New Holland.

87. ODYNERUS FLAVO-CINCTUS. B.M.

Male. Length 4 lines.—Black: the head and thorax roughly punctured; a minute spot behind the eyes, another between the antennæ and the clypeus, yellow; the clypeus deeply emarginate anteriorly, the angles spinose. Thorax: the prothorax anteriorly, a spot beneath the wings, another on each side of the scutellum, yellow; the metathorax concavely truncate, a minute tooth on each side in the middle of the margin of the truncation, the tooth yellow; the wings hyaline, the anterior margin of the superior pair fuscous; the knees, tibiæ and tarsi ferruginous. Abdomen shining; the first segment much narrower than the second and with a longitudinal impressed line above; the apical margins of the first and second segments with narrow yellow bands which are slightly notched in the middle; the second is continuous beneath, notched in the middle and emarginate on each side; the third and following segments have their apical margins obscurely ferruginous; the first segment and the base of the second with a bright silky pubescence.

Hab. New Holland.

This is probably the male of *O. emarginatus*, the species having the clypeus deeply emarginate and spined at the angles.

88. ODYNERUS ALASTORIPENNIS.

Odynerus Alastoripennis, *Sauss. Mon. Guêpes Sol.* 147. 34. t. 16. f. 5.

Hab. Tasmania.

89. ODYNERUS VERNALIS.

Odynerus vernalis, *Sauss. Mon. Guêpes Sol.* 148. 35 ♀.

Hab. Tasmania.

90. ODYNERUS EXTRANÆUS.

Odynerus exilis, *Sauss. Mon. Guêpes Sol.* 157. 41. t. 17. f. 2.
Odynerus extranæus, *Sauss. Mon. Guêpes Sol. Supp.* 224.

Hab. Tasmania.

91. ODYNERUS CLYPEATUS.

Odynerus clypeatus, *Sauss. Mon. Guêpes Sol.* 200. 101. t. 18. f. 6.

Hab. Tasmania.

92. ODYNERUS NIGROCINCTUS.

Odynerus nigrocinctus, *Sauss. Mon. Guêpes Sol.* 201. 102.

Hab. Tasmania.

93. ODYNERUS DIEMENSIS. B.M.

Odynerus Diemensis, *Sauss. Mon. Guêpes Sol.* 201. 103 ♀.

Hab. Tasmania.

94. ODYNERUS CONCOLOR.

Odynerus concolor, *Sauss. Mon. Guêpes Sol.* 202. 104. t. 18. f. 7.

Hab. Tasmania.

95. ODYNERUS TAMARINUS. B.M.

Odynerus Tamarinus, *Sauss. Mon. Guêpes Sol.* 203. 105.

Hab. Tasmania.

96. ODYNERUS ALARIS.

Odynerus alaris, *Sauss. Mon. Guêpes Sol.* 203. 106. t. 18. f. 5.

Hab. Tasmania.

97. ODYNERUS TASMANIENSIS. B.M.

Odynerus Tasmaniensis, *Sauss. Mon. Guêpes Sol.* 199. t. 18. f. 4.

Hab. Tasmania.

Div. IV.—*Species of Africa* (*Madagascar*).

98. Odynerus trilobus. B.M.

Vespa triloba, *Fabr. Mant. Ins.* i. 290. 41; *Ent. Syst.* ii. 268. 54; *Syst. Piez.* 263. 53.
Oliv. Encycl. Méth. vi. 687. 86.
Odynerus trilobus, *St. Farg. Hym.* ii. 635. 20.
Sauss. Mon. Guêpes Sol. 186. 82.

Hab. Isle of France; Madagascar.

99. Odynerus melanus.

Odynerus melanus, *Sauss. Mon. Guêpes Sol.* 159. 44. t. 18. f. 9.

Hab. Madagascar.

100. Odynerus renimacula.

Odynerus renimacula, *St. Farg. Hym.* ii. 654. 37.
Lucas, Explo. Sc. Algér. iii. 238.
Sauss. Mon. Guêpes Sol. 128. 8.
Savigny, Descr. Egypt. Hym. t. 9. f. 2 ♂.

Hab. Algeria.

101. Odynerus Atropos.

Odynerus Atropos, *St. Farg. Hym.* ii. 661. 41.
Lucas, Explo. Sc. Algér. iii. 240.
Sauss. Mon. Guêpes Sol. 134. 15.

Hab. Algeria; Egypt.

102. Odynerus longispinosus.

Odynerus longispinosus, *Sauss. Mon. Guêpes Sol. Supp.* 213.

Hab. Algeria.

103. Odynerus Macta.

Odynerus Macta, *St. Farg. Hym.* ii. 639. 24.
Lucas, Explo. Sc. Algér. iii. 236.
Sauss. Mon. Guêpes Sol. 159. 43. t. 11. f. 7.

Hab. Algeria.

104. Odynerus fastidiosus.

Odynerus fastidiosus, *Sauss. Mon. Guêpes Sol.* 189. 85 ♀.

Hab. Algeria.

105. ODYNERUS INNUMERABILIS.

Odynerus innumerabilis, *Sauss. Mon. Guêpes Sol.* 189. 86, & *Supp.* 233 (O. posticus, *Herr.-Schæff.*?).

Hab. Algeria.

106. ODYNERUS CRENATUS. B.M.

Odynerus crenatus, *St. Farg. Hym.* ii. 629. 16.
Lucas, Explo. Sc. Algér. Ins. iii. 235.
Sauss. Mon. Guêpes Sol. 191. 89. t. 12. f. 5.
Vespa aucta, *Fabr. Syst. Piez.* 267. 74?

Hab. Algeria.

107. ODYNERUS PARVULUS.

Pterochilus lætus, *Herr.-Schæff. Faun. Germ.* 173. 8. t. 23 ♂.
Odynerus parvulus, *St. Farg. Hym.* ii. 631. 17.
Lucas, Explo. Sc. Algér. Ins. iii. 236. t. 11. f. 9.
Sauss. Mon. Guêpes Sol. 193. 91.
Odynerus Amadensis, *Sauss. Mon. Guêpes Sol. Supp.* 214. 105. var., & *Supp.* 279. t. 12. f. 9.

Hab. Algeria.

108. ODYNERUS FILIPALPIS.

Odynerus filipalpis, *Sauss. Mon. Guêpes Sol.* 197. 97 ♀.
(*Savigny*), *Descr. Egypt. Hym.* t. 9. f. 12.

Hab. Algeria.

109. ODYNERUS TRIPUNCTATUS. B.M.

Vespa tripunctata, *Fabr. Mant.* i. 290. 47; *Ent. Syst.* ii. 270. 63; *Syst. Piez.* 264. 62.
Oliv. Encycl. Méth. vi. 688. 93.
Odynerus tripunctatus, *Sauss. Mon. Guêpes Sol.* 196. 96.
Descr. Egypt. (*Savigny*) *Hym.* t. 9. f. 11.

Hab. Algeria; Egypt.

110. ODYNERUS FLORICOLA.

Odynerus floricola, *Sauss. Mon. Guêpes Sol.* 196. 95. t. 18. f. 3, & *Supp.* 239. 196.

Hab. Algeria.

111. ODYNERUS EMORTUALIS.

Odynerus emortualis, *Sauss. Mon. Guêpes Sol.* 230. 139. t. 19. f. 9.

Hab. Algeria?

112. Odynerus bispinosus.

Odynerus bispinosus, *St. Farg. Hym.* ii. 622. 11.
Lucas, Explo. Sc. Algér. iii. 232. t. 11. f. 6.
Sauss. Mon. Guêpes Sol. 206. 109.

Hab. Algeria.

113. Odynerus bivittatus.

Odynerus bivittatus, *St. Farg. Hym.* ii. 617. 8.
Sauss. Mon. Guêpes Sol. 211. 117. t. 19. f. 3.

Hab. Algeria.

114. Odynerus luteolus.

Vespa labiata, *Fabr. Ent. Syst. Supp.* 260. 18? *Syst. Piez.* 257. 18?
Odynerus luteolus, *St. Farg. Hym.* ii. 616. 7.
Lucas, Explo. Sc. Algér. iii. 231. t. 11. f. 4.
Sauss. Mon. Guêpes Sol. 216. 123, *& Supp.* 245.

Hab. Algeria (Oran).

115. Odynerus regulus.

Odynerus regulus, *Sauss. Mon. Guêpes Sol. Supp.* 247. 121. t. 11. f. 5 ♂.

Hab. Algeria.

116. Odynerus fastidiosissimus.

Odynerus fastidiosissimus, *Sauss. Mon. Guêpes Sol. Supp.* 265. 145. t. 12. f. 7.

Hab. Algeria.

117. Odynerus Blanchardianus.

Odynerus Blanchardianus, *Sauss. Mon. Guêpes Sol. Supp.* 276. 157. t. 13. f. 8.

Hab. Algeria.

118. Odynerus Doursii.

Odynerus Doursii, *Sauss. Mon. Guêpes Sol. Supp.* 278. 160.

Hab. Algeria.

119. Odynerus Pontebæ.

Odynerus Pontebæ, *Sauss. Mon. Guêpes Sol. Supp.* 279. 161.

Hab. Algeria (Ponteba).

120. ODYNERUS NOTULA. B.M.

Odynerus notula, *St. Farg. Hym.* ii. 612. 4.
Lucas, Explo. Sc. Algér. iii. 229. t. 11. f. 2.
Sauss. Mon. Guêpes Sol. 219. 126.

Hab. Algeria.

121. ODYNERUS VARIOLOSUS.

Odynerus variolosus, *St. Farg. Hym.* ii. 613. 5.
Lucas, Explo. Sc. Algér. iii. 235.
Sauss. Mon. Guêpes Sol. 220. 127.

Hab. Algeria.

122. ODYNERUS ROTUNDIGASTER.

Odynerus rotundigaster, *Sauss. Mon. Guêpes Sol.* 221. 128. t. 19. f. 8.

Hab. Algeria.

123. ODYNERUS RUFIDULUS.

Odynerus rufidulus, *St. Farg. Hym.* ii. 641. 26.
Lucas, Explo. Sc. Algér. iii. t. 11. f. 11.
Sauss. Mon. Guêpes Sol. 222. 129.

Hab. Algeria.

124. ODYNERUS VARIEGATUS.

Vespa variegata, *Fabr. Ent. Syst.* ii. 269. 59.
Odynerus flavus, *St. Farg. Hym.* ii. 615. 6.
Lucas, Explo. Sc. Algér. iii. 230. t. 11. f. 3.
Odynerus variegatus, *Sauss. Mon. Guêpes Sol.* 229. 138.

Hab. Algeria.

125. ODYNERUS BIDENTATUS.

Odynerus bidentatus, *St. Farg. Hym.* ii. 623. 12.
Lucas, Explo. Sc. Algér. iii. 233. t. 11. f. 7.
Sauss. Mon. Guêpes Sol. 188. 84. t. 18. f. 1.

Hab. Algeria (Oran).

126. ODYNERUS IMPUNCTATUS.

Odynerus impunctatus, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 502.
Descr. Egypt. (*Savigny*) *Hym.* t. 9. f. 5.

Hab. Egypt.

127. ODYNERUS CHLOROTICUS. B.M.

Odynerus chloroticus, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 500.
Odynerus testaceus, *Sauss. Mon. Guêpes Sol.* 195. 94.
Descr. Egypt. (*Savigny*) *Hym.* t. 10. f. 1.

Hab. Egypt.

128. ODYNERUS BIPHALERATUS.

Odynerus biphaleratus, *Sauss. Mon. Guêpes Sol.* 134. 14. t. 16. f. 2.
Descr. Egypt. (*Savigny*) *Hym.* t. 9. f. 6 ♀.

Hab. Egypt.

129. ODYNERUS CANALICULATUS.

Odynerus canaliculatus, *Sauss. Mon. Guêpes Sol. Supp.* 260. 138. t. 14. f. 4, 4 *a*.

Hab. Arabia.

130. ODYNERUS DIMIDIATUS.

Odynerus dimidiatus, *Spin. Ann. Soc. Ent. Fr.* 1st ser. vii. 502.

Hab. Egypt.

131. ODYNERUS SAVIGNYI.

Odynerus Savignyi, *Sauss. Mon. Guêpes Sol.* 226. 134.

Hab. Arabia (Djidda).

132. ODYNERUS ALEXANDRINUS.

Odynerus Alexandrinus, *Sauss. Mon. Guêpes Sol.* 225. 133.

Hab. Egypt.

133. ODYNERUS QUADRI-TUBERCULATUS. B.M.

Male. Length 4 lines.—Black: the clypeus notched at the apex; the head and thorax coarsely punctured; the clypeus and a spot above it, a spot in the emargination of the eyes and another behind them, pale testaceous; a transverse ferruginous band on the clypeus, the mandibles, the flagellum beneath, and its two basal segments, ferruginous. The prothorax, a spot beneath the wings, the tegulæ, two minute spots on the scutellum and post-scutellum, the sides of the metathorax and the legs, ferruginous; the tibiæ outside and the basal joint of the tarsi white; a pale testaceous spot in the middle of the anterior margin of the prothorax, and another on the tegulæ in front; the wings subhyaline, the anterior and apical margins of the superior pair dark fuscous; the scutellum and post-scutellum subdentate on each side

laterally. The first and second segments of the abdomen ferruginous at the sides; all the segments with a white fascia on their apical margins; beneath, the second segment ferruginous, with a white fascia on its apical margin, the inner edge of which is waved.

Hab. Port Natal.

This species is allied to *Odynerus vulneratus* of Saussure.

134. ODYNERUS EUMENOIDES. B.M.

Male. Length 3 lines.—Black: the abdomen subpetiolate, the first segment campanulate and much narrower than the second; the clypeus narrowed and bidentate at the apex; a transverse line at its base and a narrow line on the scape in front, yellow. The prothorax truncate, the metathorax rounded; the former with a line in front, a spot on the tegulæ behind, the post-scutellum, tibiæ and tarsi, yellow; the anterior legs wanting; the apical joints of the tarsi ferruginous; the wings hyaline, their apical margins clouded, as well as the apex of the externo-medial cell. The first and second segments of the abdomen with a yellow fascia on their apical margins; one or two of the following segments with a yellow spot in the middle of their apical margins.

Hab. Port Natal.

135. ODYNERUS CAPENSIS.

Odynerus Capensis, *Sauss. Mon. Guêpes Sol. Supp.* 214. 104.

Hab. Cape of Good Hope.

136. ODYNERUS RHYNCHIFORMIS.

Odynerus rhynchiformis, *Sauss. Mon. Guêpes Sol.* 174. 65. t. 17. f. 12.

Hab. Cape of Good Hope.

137. ODYNERUS SILAENSIS.

Odynerus Silaos, *Sauss. Mon. Guêpes Sol.* 213. 119, *& Supp.* 244. t. 19. f. 6.

Hab. Isle of Bourbon; Cape of Good Hope.

138. ODYNERUS HOTTENTOTTUS.

Odynerus posticus, *Sauss. Mon. Guêpes Sol.* 214. 120, *& Supp.* 244.

Hab. Cape of Good Hope.

139. ODYNERUS NATALENSIS.

Odynerus Natalensis, *Sauss. Mon. Guêpes Sol. Supp.* 261. 140.
Hab. Cape of Good Hope (Port Natal).

140. ODYNERUS IMBECILIS.

Odynerus imbecilis, *Sauss. Mon. Guêpes Sol.* 126. 5 ♂.
Hab. Sierra Leone.

141. ODYNERUS ÆTHIOPICUS.

Odynerus Æthiopicus, *Sauss. Mon. Guêpes Sol. Supp.* t. 13. f. 8.
Hab. Sierra Leone.

142. ODYNERUS BISUTURALIS.

Odynerus bisuturalis, *Sauss. Mon. Guêpes Sol.* 127. 6.
Hab. Senegal.

143. ODYNERUS DIFFORMIS.

Odynerus difformis, *Sauss. Mon. Guêpes Sol.* 145. 31. t. 16. f. 11.
Descr. Egypt. (*Savigny*) *Ins. Hym.* t. 8. f. 11.
Hab. Senegal.

144. ODYNERUS RHYNCHOIDES.

Odynerus rhynchoides, *Sauss. Mon. Guêpes Sol.* 174. 64. t. 7. f. 12.
Hab. Senegal.

145. ODYNERUS SYNAGROIDES.

Odynerus Synagroides, *Sauss. Mon. Guêpes Sol.* 198. 99. t. 18. f. 2 ♀.
Hab. Senegal.

146. ODYNERUS MULTICOLOR.

Odynerus multicolor, *Sauss. Mon. Guêpes Sol.* 209. 113. t. 18. f. 11.
Hab. Senegal.

147. ODYNERUS BELLATUS. B.M.

Odynerus bellatus, *Sauss. Mon. Guêpes Sol.* 210. 116. t. 18. f. 10.
Descr. Egypt. (*Savigny*) *Hym.* t. 9. f. 14.
Hab. Senegal; Egypt.

148. ODYNERUS TROGLODYTES.

Odynerus troglodytes, *Sauss. Mon. Guêpes Sol. Supp.* 249. 128.
Hab. Senegal.

149. ODYNERUS MINIATUS.

Odynerus miniatus, *Sauss. Mon. Guêpes Sol. Supp.* 249. 124. t. 11. f. 6 ♀.

Hab. Senegal.

150. ODYNERUS SENEGALENSIS.

Odynerus Senegalensis, *Sauss. Mon. Guêpes Sol.* 219. 125. t. 19. f. 7.

Hab. Senegal.

151. ODYNERUS COMBUSTUS.

Male. Length 5 lines.—Ferruginous, variegated with yellow spots and bands: the clypeus narrowed in front and bidentate at the apex; the outer orbit of the eyes, the inner orbits as high as their emargination, the base of the mandibles, the clypeus, and a spot above it and the scape in front, yellow; the flagellum slightly fuscous above towards the apex. Thorax: the prothorax in front, a spot beneath the wings, the tegulæ, a line on each side of the scutellum, the post-scutellum, the sides of the metathorax, the coxæ in front, the tips of the femora and the tibiæ in front, yellow; the wings hyaline, with a fuscous stain along the anterior margin of the superior pair. Abdomen: the first, second and third segments with a yellow fascia on their apical margins, the second and third continued beneath; the entire insect closely and rather strongly punctured.

Hab. Africa (the Gambia). (Coll. F. Smith.)

In colouring, this species resembles *O. mutans*, but in that species the abdomen is smooth, and its first segment produced in the middle of its apical margin above into an angular shape, which is not the case in the present species.

152. ODYNERUS INSTABILIS.

Female. Length 4 lines.—Black: the metathorax red; the scape in front, the base and apex of the clypeus, the mandibles, a transverse line on the forehead entering the emargination of the eyes, a line on their inner orbit, and also an elongate spot behind them, yellow; the scape above and the flagellum, fulvous, the latter slightly fuscous above towards the apex; the mandibles usually more or less ferruginous. The prothorax anteriorly, a spot beneath the wings, the tegulæ, scutellum and legs, yellow; the coxæ and tarsi slightly ferruginous; the wings hyaline, with the anterior margin of the superior pair fuscous; the metathorax truncate and slightly concave. The first and second segments of the abdomen with a broad yellow fascia on their posterior margins,

which are widened at the sides; the third segment with a narrower fascia and the following of a reddish yellow.

Male.—Frequently very highly coloured, the yellow markings being of a bright sulphur-yellow, and the clypeus notched at the apex; the thorax ferruginous, the mesothorax stained with black at its basal and apical margins; the abdomen ferruginous, with a black stain on the second and third segments above; the colour variable, the thorax being sometimes black above.

Hab. Africa (Gambia). (Coll. F. Smith.)

153. ODYNERUS TROPICALIS.

Odynerus tropicalis, *Sauss. Mon. Guêpes Sol.* 214. 121. t. 19. f. 5.

Hab. Abyssinia.

154. ODYNERUS FERVIDUS.

Odynerus fervidus, *Sauss. Mon. Guêpes Sol. Supp.* 288. 174.

Hab. Africa.

155. ODYNERUS GUERINII.

Odynerus Guerinii, *Sauss. Mon. Guêpes Sol.* 176. 68 ♂.

Hab. Africa.

156. ODYNERUS TECTUS.

Vespa tectus, *Fabr. Spec. Ins.* i. 466. 48; *Ent. Syst.* ii. 274; *Syst. Piez.* 261. 40.

Oliv. Encycl. Méth. vi. 690. 107.

Odynerus tectus, *Sauss. Mon. Guêpes Sol. Supp.* 258. 135.

Hab. Africa.

157. ODYNERUS SIGNATUS. B.M.

Odynerus signatus, *Sauss. Mon. Guêpes Sol. Supp.* 258. 136.

Hab. Africa.

158. ODYNERUS CARINULATUS.

Odynerus carinulatus, *Sauss. Mon. Guêpes Sol. Supp.* 259. 137. t. 14. f. 3, 3 *a*.

Hab. Africa.

159. ODYNERUS MADÆRA.

Odynerus Madæra, *Sauss. Mon. Guêpes Sol.* 150. 38.

Hab. Madeira.

160. ODYNERUS OCHLERUS. B.M.

Odynerus ochlerus, *Sauss. Mon. Guêpes Sol.* 131. 11.
Savigny, Descr. Egypt. Hym. t. 9. f. 2?

Hab. Madeira.

161. ODYNERUS HÆMATODES.

Odynerus hæmatodes, *Brullé, Hist. Nat. Il. Canar.* 89. t. 3. f. 14.
Sauss. Mon. Guêpes Sol. 149. 36.

Hab. Canary Islands.

162. ODYNERUS RUBROPICTUS.

Odynerus hæmatodes (var.), *Brullé, Hist. Nat. Il. Canar. Ins.* 98 ♀.
Odynerus rubropictus, *Sauss. Mon. Guêpes Sol.* 150. 37.

Hab. Canary Islands.

163. ODYNERUS REFLEXUS.

Odynerus reflexus, *Brullé, Hist. Nat. Il. Canar.* 89.
Sauss. Mon. Guêpes Sol. 187. 83.

Hab. Canary Islands.

DIV. V.—*Species of South America (Chili, Peru, Brazil, Columbia, &c.).*

164. ODYNERUS AMBIGUUS.

Odynerus ambiguus, *Spin. Faun. Chili, Zool.* vi. 264. 9.
Sauss. Mon. Guêpes Sol. 140. 23. t. 6. f. 4.

Hab. Chili.

165. ODYNERUS SCABRIUSCULUS.

Odynerus scabriusculus, *Spin. Faun. Chili, Zool.* vi. 262. 8.
Sauss. Mon. Guêpes Sol. 140. 24. t. 11. f. 1.

Hab. Chili.

166. ODYNERUS BUSTILLOSI.

Odynerus Bustillos, *Sauss. Mon. Guêpes Sol.* 141. 25 ♂; *Supp.* 205. 141.
Odynerus bustillosi, *Sauss. Faun. Chili, Zool.* vi. *Supp.* 567. 10.

Hab. Chili.

167. ODYNERUS EXCIPIENDUS.

Eumenes excipienda, *Spin. Faun. Chili*, vi. 266. 1.
Odynerus excipiendus, *Sauss. Mon. Guêpes Sol.* 161. 47.
Odynerus colocolo, *Sauss. Mon. Guêpes Sol.* 161. 46, & *Supp.* 227. t. 17. f. 4.

Hab. Chili.

168. ODYNERUS SUBPETIOLATUS.

Odynerus subpetiolatus, *Sauss. Mon. Guêpes Sol.* 162. 48.
Odynerus coarctatus, *Sauss. Faun. Chili*, vi. *Supp.* 565. 7.

Hab. Chili.

169. ODYNERUS TUBERCULIVENTRIS.

Eumenes tuberculiventris, *Spin. Faun. Chili*, vi. 267. 2.
Odynerus tuberculiventris, *Sauss. Mon. Guêpes Sol.* 162. 49.

Hab. Chili (Coquimbo, Tucapel).

170. ODYNERUS TUBERCULATUS.

Odynerus tuberculatus, *Sauss. Mon. Guêpes Sol.* 163. 50.
Sauss. Faun. Chili, Zool. vi. *Supp.* 564. 6.

Hab. Chili.

171. ODYNERUS LABIATUS.

Odynerus labiatus, *Halid. Trans. Linn. Soc.* xvii. 323.
Odynerus Lachesis, *St. Farg. Hym.* ii. 667. 44.
Sauss. Mon. Guêpes Sol. 167. 51, & *Supp.* 228. t. 17. f. 5.
Odynerus marginicollis, *Spin. Faun. Chili*, vi. 256.

Hab. Chili.

172. ODYNERUS OBSCURIPENNIS.

Odynerus obscuripennis, *Spin. Faun. Chili*, vi. 259. 4.
Sauss. Mon. Guêpes Sol. 165. 52.
Odynerus Coquimbensis, *Sauss. Faun. Chili*, vi. *Supp.* 561. 1.

Hab. Chili.

173. ODYNERUS VILLOSUS.

Odynerus villosus, *Sauss. Faun. Chili*, vi. *Supp.* 563. 4; *Mon. Guêpes Sol.* 165. 53.

Hab. Chili.

174. ODYNERUS HUMERALIS. B.M.

Odynerus humeralis, *Halid. Trans. Linn. Soc.* xvii. 324 ♀.
Odynerus Chiliensis, *St. Farg. Hym.* ii. 643. 28.
Odynerus Chilensis, *Spin. Faun. Chili,* vi. 255. 1.
Sauss. Mon. Guêpes Sol. 166. 54. t. 17. f. 6, *& Supp.* 228.

Hab. Chili; Columbia.

175. ODYNERUS ARCUATUS.

Odynerus arcuatus, *Sauss. Mon. Guêpes Sol.* 160. 45.

Hab. Chili.

176. ODYNERUS AUTUCENSIS.

Odynerus Autuco, *Sauss. Mon. Guêpes Sol.* 167. 55, *& Supp.* 228.
Odynerus Autucensis, *Sauss. Faun. Chili,* vi. *Supp.* 562. 2.

Hab. Chili.

177. ODYNERUS CHILIOTUS.

Odynerus Chiliotus, *Sauss. Mon. Guêpes Sol.* 167. 56, *& Supp.* 229. 167; *Faun. Chili,* vi. *Supp.* 564. t. 17. f. 6.

Hab. Chili.

178. ODYNERUS RUFICOLLIS.

Odynerus ruficollis, *Spin. Faun. Chili,* vi. 259. 5.
Sauss. Mon. Guêpes Sol. 168. 57.

Hab. Chili.

179. ODYNERUS MAYPINUS.

Odynerus maipinus, *Sauss. Mon. Guêpes Sol.* 169. 58.
Odynerus maypinus, *Sauss. Faun. Chili, Zool.* vi. *Supp.* 564. 5.

Hab. Chili.

180. ODYNERUS GAYI. B.M.

Odynerus Gayi, *Spin. Faun. Chili,* vi. 260. 6.
Sauss. Mon. Guêpes Sol. 170. 59. t. 17. f. 7.

Hab. Chili.

181. ODYNERUS VESPIFORMIS.

Odynerus vespiformis, *Halid. Trans. Linn. Soc.* xvii. 323. 33. (1837).
Odynerus hirsutulus, *Spin. Faun. Chili,* vi. 57. 3.
Sauss. Mon. Guêpes Sol. 212. 118.

Hab. Chili.

182. Odynerus Molinus.

Odynerus Molinus, *Sauss. Mon. Guêpes Sol. Supp.* 262. 3.

Hab. Chili.

183. Odynerus pilosus.

Odynerus pilosus, *Sauss. Mon. Guêpes Sol. Supp.* t. 11. f. 8.

Hab. Peru.

184. Odynerus Peruensis.

Odynerus Peruensis, *Sauss. Mon. Guêpes Sol. Supp.* 253. 129. t. 12. f. 4.

Hab. Peru.

185. Odynerus vestitus.

Odynerus vestitus, *Sauss. Mon. Guêpes Sol. Supp.* 252. 127.

Hab. Peru.

186. Odynerus Alasteroides.

Odynerus Alasteroides, *Sauss. Mon. Guêpes Sol.* 147. 33. t. 16. f. 6.

Hab. Monte Video.

187. Odynerus fastidiosusculus.

Odynerus fastidiosusculus, *Sauss. Mon. Guêpes Sol.* 137. 19.

Hab. Brazil.

188. Odynerus Paraensis.

Odynerus Paraensis, *Sauss. Mon. Guêpes Sol. Supp.* 207. 95.

Hab. Para.

189. Odynerus brachygaster.

Odynerus brachygaster, *Sauss. Mon. Guêpes Sol.* 173. 63. t. 17. f. 8.

Hab. Brazil (Para).

190. Odynerus advena. B.M.

Odynerus advena, *Sauss. Mon. Guêpes Sol. Supp.* 222. 117. t. 11. f. 3, 3 *a*, 3 *b*, 4.

Hab. Brazil.

191. Odynerus pumilus.

Odynerus pumilus, *Sauss. Mon. Guêpes Sol. Supp.* 197. 93.

Hab. Cayenne.

192. ODYNERUS COLUMBARIS.

Odynerus Columbaris, *Sauss. Mon. Guêpes Sol.* 158. 42. t. 17. f. 3.

Hab. Columbia.

193. ODYNERUS NASIDENS.

Odynerus nasidens, *Latr. Voy. aux Rég. Equinox., Humb. et Bonpl.* ii. 112. t. 15. f. 1–2.
Sauss. Mon. Guêpes Sol. 171. 61.

Hab. Columbia.

194. ODYNERUS BREVITHORAX. B.M.

Odynerus brevithorax, *Sauss. Mon. Guêpes Sol.* 172. 62. t. 17. f. 9.

Hab. South America.

195. ODYNERUS TIBIALIS.

Odynerus tibialis, *Sauss. Mon. Guêpes Sol.* 183. 78.

Hab. Columbia.

196. ODYNERUS ROMANDINUS.

Odynerus Romandinus, *Sauss. Mon. Guêpes Sol.* 184. 79.

Hab. Columbia; Venezuela.

197. ODYNERUS INCOMMODUS.

Odynerus incommodus, *Sauss. Mon. Guêpes Sol.* 143. 29.

Hab. Columbia.

198. ODYNERUS TARABUCENSIS.

Odynerus Tarabucensis, *Sauss. Mon. Guêpes Sol. Supp.* 250. 125.

Hab. Bolivia.

199. ODYNERUS PRÆCOX.

Odynerus præcox, *Sauss. Mon. Guêpes Sol. Supp.* 254. 130. t. 11. f. 9.

Hab. South America.

200. ODYNERUS PRUINOSUS. B.M.

Female. Length 6 lines.—Black: in certain lights, covered with fine silvery pile; a stripe at the base of the clypeus, a minute spot between the antennæ and another behind the eyes, white; the head, thorax and base of the abdomen strongly punctured; the anterior margin of the prothorax, a spot beneath the

wings, the anterior and posterior margins of the tegulæ, a spot behind them, the post-scutellum and the lateral margins of the metathorax, a spot at the apex of the anterior femora behind, and the anterior and intermediate tibiæ outside, white; the metathorax truncate, slightly concave, with a central impressed line, on each side of which it is obliquely striated; the wings hyaline, with their margins clouded. The first and second segments of the abdomen with white fasciæ on their apical margins, that on the second continued beneath.

Hab. St. Domingo.

Div. VI.—*Species of North America (Mexico, Carolina, Arctic America, Canada, &c.).*

201. Odynerus tuberculiceps.

Odynerus tuberculocephalus, *Sauss. Mon. Guêpes Sol.* 139. 22.
Odynerus tuberculiceps, *Sauss. Mon. Guêpes Sol. Supp.* 205. 139. t. 16. f. 9.

Hab. Mexico.

202. Odynerus similis. B.M.

Female. Length 4½ lines.—Black: covered with ochraceous pubescence, and having also a clothing of changeable pale golden pile, that on the abdomen very brilliant in some positions; the clypeus truncate at the apex, the lateral angles acute, subdentate; a yellow spot between the antennæ and another at the apex of the clypeus. The thorax slightly narrowed anteriorly and posteriorly; the anterior margin of the prothorax not raised or sharply truncate; the metathorax rounded at the sides and truncate posteriorly and slightly concave; the wings hyaline, the anterior margin of the superior pair yellowish, the nervures ferruginous. Abdomen: the first segment much narrower than the second, strongly punctured, its apical margin marginate; the apical margin of the second and three following segments with a broad yellow fascia; the apical segment yellow with a black spot in the middle of its base; the fasciæ on the segments continued beneath.

Hab. Mexico.

This species closely resembles *Odynerus brevithoraæ*, but the thorax is not quadrate as in that insect, the metathorax is not widely truncate, nor is the post-scutellum produced at its apical margin: the form and sculpture of the basal segment are very different.

203. ODYNERUS CATEPETLENSIS.

Odynerus Catepetlensis, *Sauss. Mon. Guêpes Sol. Supp.* 255. 132.

Hab. Mexico.

204. ODYNERUS SYMMORPHUS.

Odynerus symmorphus, *Sauss. Mon. Guêpes Sol. Supp.* 246. 119.

Hab. Florida.

205. ODYNERUS CAMPESTRIS.

Odynerus campestris, *Sauss. Mon. Guêpes Sol.* 137. 18 ♀.

Hab. Carolina; Florida.

206. ODYNERUS ADIABATUS.

Odynerus adiabatus, *Sauss. Mon. Guêpes Sol.* 138. 20.

Hab. Carolina.

207. ODYNERUS SÆCULARIS.

Odynerus sæcularis, *Sauss. Mon. Guêpes Sol.* 142. 26.

Hab. Carolina.

208. ODYNERUS FULVIPES. B.M.

Odynerus flavipes, *St. Farg. Hym.* ii. 659. 39.
Sauss. Mon. Guêpes Sol. 142. 27.
Odynerus fulvipes, *Sauss. Mon. Guêpes Sol. Supp.* 205. t. 16. f. 3.

Hab. Carolina.

209. ODYNERUS QUADRISECTUS. B.M.

Odynerus 4-sectus, *Say, Bost. Journ. Nat. Hist.* i. 385.
Sauss. Mon. Guêpes Sol. Supp. 206. t. 9. f. 9.
Odynerus Bellone, *St. Farg. Hym.* ii. 660. 40.
Sauss. Mon. Guêpes Sol. 146. 32. t. 16. f. 10.

Hab. Carolina.

210. ODYNERUS BOSCII. B.M.

Odynerus Boscii, *St. Farg. Hym.* ii. 637.
Sauss. Mon. Guêpes Sol. 177. 69. t. 17. f. 10.

Hab. Carolina.

211. ODYNERUS ERYNNIS.

Odynerus Erynnis, *St. Farg. Hym.* ii. 645.
Sauss. Mon. Guêpes Sol. 178. 70.

Hab. Carolina.

212. ODYNERUS CASTIGATUS.

Odynerus castigatus, *Sauss. Mon. Guêpes Sol.* 178. 71.

Hab. Carolina.

213. ODYNERUS FORAMINATUS.

Odynerus foraminatus, *Sauss. Mon. Guêpes Sol.* 180. 73.

Hab. Carolina.

214. ODYNERUS MEGÆRA. B.M.

Odynerus Megæra, *St. Farg. Hym.* ii. 636. 21.
Sauss. Mon. Guêpes Sol. 181. 74. t. 17. f. 11.

Hab. Carolina.

215. ODYNERUS TISIPHONE.

Odynerus Tisiphone, *St. Farg. Hym.* ii. 646.
Sauss. Mon. Guêpes Sol. 183. 77.

Hab. Carolina.

216. ODYNERUS HISTRIO. B.M.

Odynerus histrio, *St. Farg. Hym.* ii. 638. 23.
Sauss. Mon. Guêpes Sol. 208. 112.

Hab. Carolina.

217. ODYNERUS BIRENIMACULATUS.

Odynerus birenimaculatus, *Sauss. Mon. Guêpes Sol.* 135. 16 ♀.

Hab. Carolina.

218. ODYNERUS CRISTATUS. B.M.

Odynerus cristatus, *Sauss. Mon. Guêpes Sol. Supp.* 196. 92.

Hab. North America?

219. ODYNERUS UNCINATUS. B.M.

Odynerus uncinatus, *Say, Bost. Journ. Nat. Hist.* i. 18. 34. 386.
Odynerus unifasciatus, *Sauss. Mon. Guêpes Sol.* 138. 21.

Hab. North America.

220. ODYNERUS PEDESTRIS.

Odynerus fuscipes, *Sauss. Mon. Guêpes Sol.* 143. 28 (nec *Herr.-Schæff.*).
Odynerus pedestris, *Sauss. Mon. Guêpes Sol. Supp.* 206.

Hab. North America.

221. ODYNERUS AMMONIS. B.M.

Odynerus ammonia, *Sauss. Mon. Guêpes Sol.* 144. 30.

Hab. North America; Carolina.

222. ODYNERUS SPINOLÆ.

Odynerus Spinolæ, *Sauss. Mon. Guêpes Sol. Supp.* 216. 107.

Hab. Philadelphia.

223. ODYNERUS PERTINAX. B.M.

Odynerus pertinax, *Sauss. Mon. Guêpes Sol. Supp.* 216. 108.

Hab. United States (New York).

224. ODYNERUS CONFORMIS.

Odynerus conformis, *Sauss. Mon. Guêpes Sol. Supp.* 219. 112.

Hab. Louisiana; New Orleans.

225. ODYNERUS OCULATUS.

Odynerus oculatus, *Say, Bost. Journ. Nat. Hist.* i. 385.
Sauss. Mon. Guêpes Sol. Supp. 219. 113.

Hab. North America (Ohio; Missouri).

226. ODYNERUS LUCTUOSUS.

Odynerus luctuosus, *Sauss. Mon. Guêpes Sol. Supp.* 220. 114.

Hab. North America; South Carolina.

227. ODYNERUS DIABOLICUS.

Odynerus diabolicus, *Sauss. Mon. Guêpes Sol.* 171. 60.

Hab. North America.

228. ODYNERUS RUGOSUS.

Odynerus rugosus, *Sauss. Mon. Guêpes Sol.* 179. 72.

Hab. North America.

229. ODYNERUS LEUCOMELAS. B.M.

Odynerus leucomelas, *Sauss. Mon. Guêpes Sol. Supp.* 255. 131.

Hab. North America (New York).

230. ODYNERUS PERSECUTOR.

Odynerus persecutor, *Sauss. Mon. Guêpes Sol. Supp.* 256. 133.
t. 14. f. 1.

Hab. North America.

231. Odynerus Pennsylvanicus.

Odynerus Pensylvanicus, *Sauss. Mon. Guêpes Sol. Supp.* 257. 134.

Hab. North America.

232. Odynerus Catskillensis.

Odynerus Catskill, *Sauss. Mon. Guêpes Sol.* 136. 17. *& Supp.* 204. 136. t. 16. f. 8.

Hab. North America (Catskill).

233. Odynerus albomarginatus. B.M.

Odynerus albomarginatus, *Sauss. Mon. Guêpes Sol. Supp.* 195. 90.

Hab. Hudson's Bay.

234. Odynerus Guadulpensis.

Odynerus Guadulpensis, *Sauss. Mon. Guêpes Sol.* 182. 76.
Odynerus Cubensis, *Sauss. Mon. Guêpes Sol.* 181. 75?

Hab. Guadaloupe.

235. Odynerus Canadensis. B.M.

Odynerus Canadensis, *Sauss. Mon. Guêpes Sol. Supp.* 196. 91.

Hab. Canada.

236. Odynerus Sylveiræ.

Odynerus Sylveiræ, *Sauss. Mon. Guêpes Sol. Supp.* 217. 110. t. 10. f. 8.

Hab. Arctic America.

237. Odynerus albophaleratus. B.M.

Odynerus albophaleratus, *Sauss. Mon. Guêpes Sol. Supp.* 217. 109.

Hab. Arctic America.

238. Odynerus figulus.

Odynerus figulus, *Sauss. Mon. Guêpes Sol. Supp.* 247. 120.

Hab. Guadaloupe.

239. Odynerus Enyo.

Odynerus elegans, *Guérin, Icon. Règn. Anim. Ins.* t. 70. f. 5.
Odynerus Enyo, *St. Farg. Hym.* ii. 648. 33.
Sauss. Mon. Guêpes Sol. 185. 81.

Hab. Cuba; Peru.

240. ODYNERUS BACUENSIS.

Odynerus Bacu, *Sauss. Mon. Guêpes Sol.* 185. 80. *& Supp.* 232.
Hab. Cuba.

241. ODYNERUS CUBENSIS.

Odynerus Cubensis, *Sauss. Mon. Guêpes Sol.* 181. 75. t. 18. f. 8.
Hab. Cuba.

242. ODYNERUS SIMPLICICORNIS.

Odynerus simplicicornis, *Sauss. Mon. Guêpes Sol. Supp.* 253. 128.
Hab. Cuba.

243. ODYNERUS VELOX.

Odynerus velox, *Sauss. Mon. Guêpes Sol.* 228. 136.
Hab. ——?

244. ODYNERUS BIPUSTULATUS.

Vespa biguttata, *Fabr. Mant. Ins.* i. 291. 53; *Ent. Syst.* ii. 272. 68; *Syst. Piez.* 267. 72?
Oliv. Encycl. Méth. vi. 689. 99.
Odynerus bipustulatus, *Sauss. Mon. Guêpes Sol. Supp.* 277. 158. t. 12. f. 10.
Hab. China. (Mus. Paris.)

Genus 16. LEPTOCHILUS.

Discœlius, pt., *Brullé, Hist. Nat. Il. Canar.* pt. 2. 98 (1832).
Odynerus, pt., *St. Farg. Hym.* ii. 675 (1841).
Pterochilus, pt., *St. Farg. Hym.* ii. 675 (1841).
Leptochilus, *Sauss. Mon. Guêpes Sol.* 233 (1852).

1. LEPTOCHILUS ORANIENSIS. B.M.

Odynerus Oraniensis, *St. Farg. Hym.* ii. 640. 25.
Lucas, Explo. Sc. Algér. iii. 237. t. 11. f. 10.
Leptochilus Oraniensis, *Sauss. Mon. Guêpes Sol.* 236. 5.
Hab. Algeria (Oran).

2. LEPTOCHILUS ORNATUS.

Leptochilus ornatus, *Sauss. Mon. Guêpes Sol.* 236. 6.
Hab. Carolina.

3. LEPTOCHILUS FALLAX.

Leptochilus fallax, *Sauss. Mon. Guêpes Sol.* 234. 2.

Hab. North America.

4. LEPTOCHILUS MAURITANICUS.

Pterochilus mauritanicus, *St. Farg. Hym.* ii. 675. 4.
Lucas, Explo. Sc. Algér. iii. 242. t. 7. f. 2.
Leptochilus mauritanicus, *Sauss. Mon. Guêpes Sol.* 233. 1.

Hab. Algeria.

5. LEPTOCHILUS CRUENTATUS.

Discœlius cruentatus, *Brullé, Hist. Nat. Il. Canar.* pt. 2. 98. t. 3. f. 15.

Hab. Canary Islands.

6. LEPTOCHILUS MODESTUS.

Leptochilus modestus, *Sauss. Mon. Guêpes Sol.* 234. 2.

Hab. Algeria.

7. LEPTOCHILUS DENTICULATUS. B.M.

Leptochilus denticulatus, *Sauss. Rev. et Mag. Zool.* p. 173 (1855).

Hab. Mexico.

Genus 17. PTEROCHILUS.

Vespa, pt., *Panz. Faun. Germ.* fasc. 47.
Pterochilus, *Klug, Beitr. z. Naturk. v. Weber u. Mohr,* i. 154.

1. PTEROCHILUS GLABRIPALPIS.

Pterochilus glabripalpis, *Sauss. Mon. Guêpes Sol.* 239. 1.

Hab. Senegal.

2. PTEROCHILUS LATIPALPIS.

Pterochilus latipalpis, *St. Farg. Hym.* ii. 678. 7.
Sauss. Mon. Guêpes Sol. 240. 2.

Hab. Crimea.

3. PTEROCHILUS PALLASII.

Pterochilus Pallasii, *Klug, Beitr. z. Naturk. v. Weber u. Mohr,* i. 150. t. 3. f. 1–3.
Sauss. Mon. Guêpes Sol. 241. 3.

Hab. Russia; Asia Minor; Smyrna.

4. PTEROCHILUS UNIPUNCTATUS. B.M.

Pterochilus unipunctatus, *St. Farg. Hym.* ii. 676. 5.
Lucas, Explo. Sc. Algér. iii. 243. t. 12. f. 3.
Sauss. Mon. Guêpes Sol. 242. 4.

Hab. Algeria.

5. PTEROCHILUS ORNATUS.

Pterochilus ornatus, *St. Farg. Hym.* ii. 677. 6.
Lucas, Explo. Sc. Algér. iii. 243. t. 12. f. 4.
Sauss. Mon. Guêpes Sol. 242. 5.

Hab. Algeria.

6. PTEROCHILUS PHALERATUS. B.M.

Vespa phalerata, *Panz. Faun. Germ.* 47. 21.
Pterochilus phaleratus, *Klug, Beitr. z. Naturk. v. Weber u. Mohr,* i. 154.
Latr. Gen. Crust. et Ins. iv. 139.
Herr.-Schæff. Faun. Germ. 173. 16-18.
St. Farg. Hym. ii. 673. 3.
Sauss. Mon. Guêpes Sol. 243. 6.

Hab. Europe.

7. PTEROCHILUS BIGLUMIS.

Pterochilus biglumis, *Sauss. Mon. Guêpes Sol.* 243. 7.

Hab. Cape of Good Hope.

8. PTEROCHILUS MAJOR.

Pterochilus major, *Sauss. Mon. Guêpes Sol.* 244. 8.

Hab. Cape of Good Hope.

9. PTEROCHILUS NUMIDA.

Pterochilus numida, *St. Farg. Hym.* ii. 672. 2.
Lucas, Explo. Sc. Algér. iii. 241. t. 7. f. 5.
Sauss. Mon. Guêpes Sol. 245. 9.

Hab. Algeria.

10. PTEROCHILUS CHEVRIERANUS.

Pterochilus Chevrieranus, *Sauss. Mon. Guêpes Sol. Supp.* 322. 208 ♀ ♂.

Hab. Switzerland.

11. PTEROCHILUS GRANDIS.

Pterochilus grandis, *St. Farg. Hym.* ii. 671. 1.
Lucas, Explo. Sc. Algér. iii. 241. t. 12. f. 1.
Sauss. Mon. Guêpes Sol. 246. 10.

Hab. Algeria.

12. PTEROCHILUS INTERRUPTUS.

Pterochilus interruptus, *Klug, Beitr. z. Naturg. v. Weber u. Mohr*, i. 152.
Sauss. Mon. Guêpes Sol. 246. 11.

Hab. Algeria.

13. PTEROCHILUS PILIPALPUS.

Epipona pilipalpa, *Spin. Faun. Chili, Zool.* vi. 252.
Pterochilus pilipalpus, *Sauss. Mon. Guêpes Sol.* 247. 12.

Hab. Chili.

14. PTEROCHILUS QUINQUEFASCIATUS.

Pterochilus quinquefasciatus, *Say, Exped. Source St. Peter's River*, ii. *Supp.* 79.
Sauss. Mon. Guêpes Sol. 248. 13.

Hab. United States (Missouri).

15. PTEROCHILUS CAPENSIS.

Pterochilus Capensis, *Sauss. Mon. Guêpes Sol. Supp.* 323. 209. t. 15. f. 11 ♀.

Hab. Cape of Good Hope.

16. PTEROCHILUS INSIGNIS. B.M.

Pterochilus insignis, *Sauss. Mon. Guêpes Sol. Supp.* 324. 210. t. 15. f. 12 ♀ ♂.

Hab. Cape of Good Hope; South Africa. (Coll. Dr. A. Smith.)

Genus 18. ALASTOR.

Odynerus, pt., *Guér. Voy. Coq. Ins.* ii. 266 (1830).
Alastor, *St. Farg. Hym.* ii. 668 (1841).

1. ALASTOR ATROPOS.

Alastor Atropos, *St. Farg. Hym.* ii. 669. 2.
Sauss. Mon. Guêpes Sol. 257. 12.
Descr. Egypt. (*Savigny*) *Hym.* t. 9. f. 16.

Hab. France (Paris and St. Lever).

2. ALASTOR LUCIDA.

Alastor lucida, *Sauss. Mon. Guêpes Sol.* 257. 13.

Hab. ——?

3. ALASTOR ANGUSTICOLLIS.

Alastor angusticollis, *Spin. Faun. Chili, Zool.* vi. 261.
Sauss. Mon. Guêpes Sol. 258. 14.

Hab. Chili.

4. ALASTOR MELANOSOMA.

Alastor melanosoma, *Sauss. Mon. Guêpes Sol.* 259. 15.

Hab. Brazil.

5. ALASTOR SINGULARIS.

Alastor singularis, *Sauss. Mon. Guêpes Sol.* 259. 16.

Hab. Brazil.

6. ALASTOR CLOTHO.

Alastor Clotho, *St. Farg. Hym.* ii. 668. 1.
Sauss. Mon. Guêpes Sol. 250. 1.

Hab. New Holland.

7. ALASTOR AUSTRALIS.

Alastor Australis, *Sauss. Mon. Guêpes Sol.* 250. 2.

Hab. New Holland.

8. ALASTOR ERIURGUS.

Alastor eriurgus, *Sauss. Mon. Guêpes Sol.* 251. 4.

Hab. New Holland.

9. ALASTOR AUREOCINCTUS. B.M.

Odynerus aureocinctus, *Guér. Voy. de la Coq. Zool.* 266. t. 9. f. 4.
Alastor aureocinctus, *Sauss. Mon. Guêpes Sol.* 252. 5.

Hab. New Holland.

10. ALASTOR PARCA.

Alastor parca, *Sauss. Mon. Guêpes Sol.* 254. 9.

Hab. New Holland.

11. ALASTOR SIMILIS.

Alastor similis, *Sauss. Mon. Guêpes Sol.* 256. 11.

Hab. New Holland.

12. ALASTOR ARGENTIFRONS. B.M.

Female. Length 5½ lines.—Black: the head and thorax coarsely punctured; the clypeus much longer than broad, its apical margin obtusely emarginate; a minute spot behind the eyes, a spot between the antennæ and the clypeus, orange-red; the margins of the clypeus, a spot at its base, and an abbreviated line in the middle at its apex, black; the sides of the clypeus and inner orbit of the eyes with a glittering silvery pubescence. Thorax: an orange spot on each side of the prothorax in front; the knees, tibiæ and tarsi ferruginous; the wings fusco-hyaline, darkest along the anterior margin of the superior pair; the thorax beneath, the femora and abdomen beneath, covered with a fine silky silvery pubescence. Abdomen with an orange band on the apical margin of the first segment, which is recurved on each side; the rest of the abdomen orange-red above, with a large subangular black spot at the base of the second segment extending to two-thirds of its length; beneath, the first and second segments black, the second with an orange fascia on its apical margin suddenly widened on each side; the following segments have their apical margins yellowish.

Hab. Australia.

13. ALASTOR CARINATUS.

Female. Length 6 lines.—Black: the head and thorax coarsely punctured; the clypeus longer than broad, slightly reflexed at the apex, which is truncate; above and between the antennæ is a short carina; a minute orange spot behind the eyes. Thorax: a minute orange spot on each side of the posterior margin of the prothorax; the wings fuscous, darkest along the anterior margin of the superior pair; the knees and the tibiæ ferruginous, the latter dusky outside; the metathorax truncate, the truncation slightly concave, with an impressed longitudinal line in the middle. Abdomen: the first segment truncate at the base, with a slight carina at the verge of the truncation, which is rugose; the first segment with an orange band on its apical margin, widest and notched in the middle and emarginate on each side; the other segments yellow; the base of the second segment black at the base, forming an angular shape in the middle, and with a square notch on each side; beneath, tuberculate in the middle of its base.

Hab. Adelaide. (Coll. F. Smith.)

This species is allied to the *A. aureocinctus* of Guérin, which has the basal segment of the abdomen truncate; but that insect has the clypeus bidentate at the apex, and has also a minute

tooth in the middle between the lateral ones, independent of the difference of coloration.

14. ALASTOR LACHESIS.

Alastor Lachesis, *Sauss. Mon. Guêpes Sol.* 251. 3.

Hab. Tasmania.

15. ALASTOR TASMANIENSIS.

Alastor Tasmaniensis, *Sauss. Mon. Guêpes Sol.* 253. 6.

Hab. Tasmania.

16. ALASTOR TUBERCULATUS.

Alastor tuberculatus, *Sauss. Mon. Guêpes Sol.* 253. 7.

Hab. Tasmania.

17. ALASTOR EMARGINATUS.

Alastor emarginatus, *Sauss. Mon. Guêpes Sol.* 254. 8.

Hab. Tasmania.

18. ALASTOR PUNCTULATUS.

Alastor punctulatus, *Sauss. Mon. Guêpes Sol.* 255. 10.

Hab. Tasmania.

19. ALASTOR PICTETI.

Alastor Pictetі, *Sauss. Mon. Guêpes Sol.* 256. 12.

Hab. Tasmania.

20. ALASTOR ALBOCINCTUS. B.M.

Male. Length 5 lines.—Black: the head and thorax roughly punctured; a minute spot behind the eyes and the clypeus white; the anterior margin of the latter truncate, straight. An elongate spot on each side of the posterior margin of the prothorax, a spot beneath the wings, and a minute one on each side of the scutellum, white; the wings subhyaline, with the anterior margin of the superior pair darkest; the scale black, the tibiæ and tarsi ferruginous. Abdomen: the basal segment much narrower than the second and with a few scattered punctures; the apical margins of the first and second segments with a narrow white band.

Hab. Tasmania.

This is probably the male of *A. punctulatus*, which it closely resembles, and with which it agrees in having the anterior margin of the clypeus straight.

Group 2. Social Wasps.

Family 3. VESPIDÆ, *Steph.*

This group is distinguished by the intermediate and posterior tibiæ having two spines at their apex, and by the claws of the tarsi being simple.

Vespariæ, *Latr. Hist. Nat.* (1802).
Vespides, *Leach, Edinb. Encycl.* (1812).
Vespida, *Steph. Syst. Cat.* (1829).
Vespina et Vespites, *Newm. Ent. Mag.* (1834).

Genus 1. ISCHNOGASTER.

Ischnogaster, *Guér. Voy. Coq. Ins.* 269 (1838).

1. ISCHNOGASTER FULGIPENNIS.

Ischnogaster fulgipennis, *Guér. Voy. Coq. Ins.* 269.
Sauss. Mon. Guêpes Soc. 7. 1; *Ann. Soc. Ent. Fr.* 2nd ser. x. 23.
Stenogaster fulgipennis, *Guér. Voy. Coq. Ins.* t. 9. f. 9.

Hab. New Guinea.

2. ISCHNOGASTER MICANS. B.M.

Ischnogaster micans, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 24; *Mon. Guêpes Soc.* 8. 2.

Hab. Java; Borneo (Sarawak). (Coll. A. Wallace.)

3. ISCHNOGASTER MELLYI.

Ischnogaster Mellyi, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 25. t. 2. f. 1; *Mon. Guêpes Soc.* 9. 3.

Hab. Java.

4. ISCHNOGASTER CILIPENNIS. B.M.

Male. Length 5¼ lines.—Black: the head smooth and shining; the clypeus prolonged into an acute point at the apex; the mandibles, organs of the mouth, extreme apex of the clypeus, the scape in front, the flagellum beneath and its three apical joints outside, of a pale yellowish-white; a broad yellow fascia on the front, crossing at the emargination of the eyes, its upper margin curved on each side, the curves meeting in front of the anterior ocellus; its lower margin irregularly notched. Thorax: the lateral hinder margins of the prothorax have a narrow border of yellow, which runs to the tegulæ; the anterior margin of the

latter, and a spot beneath the wings, yellow; the legs pale rufo-testaceous; the coxæ outside, the apex of the femora, and the anterior and intermediate tibiæ in front, yellow; the posterior tibiæ and tarsi, and also the intermediate tarsi, thinly fringed outside with long fine hairs; the anterior tibiæ have a row of spines or hairs which are thickened at their apex, forming clavate appendages; the scutellum, post-scutellum, and a longitudinal stripe, the width of the scutellum, on the metathorax, white; the wings subhyaline and splendidly iridescent; the hinder wings with a fringe of fine long hairs on their posterior margin. The petiole of the abdomen above, a transverse stripe at the base of the fifth and sixth segments, and the seventh entirely, yellow; a minute lateral spot on the third segment, and all the segments with a spot on each side beneath.

Hab. Malacca (Mount Ophir). (Coll. A. Wallace.)

5. ISCHNOGASTER NITIDIPENNIS.

Ischnogaster nitidipennis, *Sauss. Mon. Guêpes Soc.* 10. 4.

Hab. Cayenne.

Genus 2. BELONOGASTER.

Vespa, pt., *Fabr. Ent. Syst.* ii. 279 (1793).
Zethus, pt., *Fabr. Syst. Piez.* 282 (1804).
Raphigaster, *Sauss. Mon. Guêpes Soc.* 12 (1853): nec *Lap.* (*Hemip.*) 1833.
Belonogaster, *Sauss. Mon. Guêpes Soc. Append.* (1853).
Sphex, pt., *De Geer, Mem.* vi. (1773).

1. BELONOGASTER JUNCEUS. B.M.

Vespa juncea, *Fabr. Mant. Ins.* i. 293. 73; *Ent. Syst.* ii. 277. 85. *Oliv. Encycl. Méth. Ins.* vi. 673.
Vespa Guineensis, *Fabr. Ent. Syst.* ii. 277. 85.
Vespa cinerea, *Fabr. Ent. Syst.* ii. 279. 92.
Zethus Guineensis, *Fabr. Syst. Piez.* 283. 2.
Zethus cinereus, *Fabr. Syst. Piez.* 283. 3.
Raphigaster junceus, *Sauss. Mon. Guêpes Soc.* 14. 1. t. 2. f. 2.

Hab. Africa (Congo; Senegal; Abyssinia).

2. BELONOGASTER RUFIPENNIS. B.M.

Sphex rufipennis, *De Geer, Mém. Ins.* vii. 611. t. 45. f. 10.
Vespa macilenta, *Fabr. Spec. Ins.* i. 468. 61? *Mant. Ins.* i. 293. 74; *Ent. Syst.* ii. 280. 93.
Sphex dimidiata, *Christ. Hym.* 313. t. 31. f. 4.
Raphigaster rufipennis, *Sauss. Mon. Guêpes Soc.* 15. 2.

Hab. Africa.

3. BELONOGASTER GRISEUS. B.M.

Vespa grisea, *Fabr. Syst. Ent.* 372. 43; *Spec. Ins.* i. 468. 59; *Mant. Ins.* i. 293. 72; *Ent. Syst.* ii. 279. 91.
Oliv. Encycl. Méth. vi. 672.
Sphex grisea, *Christ. Hym.* 313.

Hab. Africa (Senegal; Sierra Leone; Whydah).

An examination of the typical specimen of this species satisfactorily proves that it cannot be regarded as a variety of *B. rufipennis*; the petiole in this species being considerably longer and more slender. Specimens from Whydah have the wings very dark brown, or nearly black.

4. BELONOGASTER MADECASSUS.

Raphigaster Madecassus, *Sauss. Mon. Guêpes Soc.* 16. 3.

Hab. Madagascar.

5. BELONOGASTER FILIVENTRIS.

Raphigaster filiventris, *Sauss. Mon. Guêpes Soc.* 16. 4.

Hab. Senegal.

6. BELONOGASTER GUERINI. B.M.

Raphigaster Guerini, *Sauss. Mon. Guêpes Soc.* 17. 5. t. 2. f. 3.

Hab. Madagascar; Sierra Leone. (Coll. Rev. D. F. Morgan.)

7. BELONOGASTER INDICUS.

Raphigaster indicus, *Sauss. Mon. Guêpes Soc.* 17. 6.

Hab. India.

8. BELONOGASTER MACILENTUS. B.M.

Raphigaster filiformis, *Sauss. Mon. Guêpes Soc.* 13. 7. t. 2. f. 4.
Zethus macilentus, *Fabr. Syst. Piez.* 283. 4. (var.)

Hab. Arabia (Djidda); Port Natal.

Genus 3. MISCHOCYTTARUS.

Zethus, pt., *Fabr. Syst. Piez.* 282 (1804).
Mischocyttarus, *Sauss. Mon. Guêpes. Soc.* 19 (1854).

1. MISCHOCYTTARUS LABIATUS. B.M.

Zethus labiatus, *Fabr. Syst. Piez.* 284. 6.
Mischocyttarus labiatus, *Sauss. Mon. Guêpes Soc.* 20. 1. t. 3. f. 8.

Hab. Cayenne; Brazil (Villa Nova on the Amazons). (Coll. H. W. Bates.)

2. MISCHOCYTTARUS SMITHII. B.M.

Mischocyttarus Smithii, *Sauss. Mon. Guêpes Soc.* 21. 2.

Hab. Brazil.

Genus 4. ICARIA.

Vespa, pt., *Fabr. Ent. Syst.* ii. 253 (1793).
Polistes, pt., *Fabr. Syst. Piez.* 269 (1804).
Rhopalidia, *Guér. Voy. de la Coq. Zool.* ii. (1830).
Epipona, *St. Farg. Hym.* i. 540 (1836).
Icaria, *Sauss. Mon. Guêpes Soc.* 22 (1853).

DIV. I.—*Species of New Guinea and Madagascar.*

1. ICARIA MACULIVENTRIS.

Rhopalidia maculiventris, *Guér. Voy. de la Coq. Zool.* ii. pt. 2. *Ins.* 267. t. 9. f. 8.
Icaria maculiventris, *Sauss. Mon. Guêpes Soc.* 23. 1.

Hab. New Guinea.

2. ICARIA AUSTRALIS.

Icaria Australis, *Sauss. Mon. Guêpes Soc.* 24. 2.

Hab. New Guinea.

3. ICARIA REACTIONALIS.

Icaria reactionalis, *Sauss. Mon. Guêpes Soc.* 28. 6.

Hab. New Guinea.

4. ICARIA CONSTITUTIONALIS.

Icaria constitutionalis, *Sauss. Mon. Guêpes Soc.* 30. 8. t. 4. f. 4.

Hab. Madagascar.

5. ICARIA POMICOLOR.

Icaria pomicolor, *Sauss. Mon. Guêpes Soc.* 32. 9. t. 5. f. 3.

Hab. Madagascar.

6. Icaria dubia.
Icaria dubia, *Sauss. Mon. Guêpes Soc.* 33. 10.
Hab. Madagascar.

7. Icaria democratica.
Icaria democratica, *Sauss. Mon. Guêpes Soc.* 33. 11.
Hab. Madagascar.

8. Icaria anarchica.
Icaria anarchica, *Sauss. Mon. Guêpes Soc.* 34. 12. t. 5. f. 4.
Hab. Madagascar.

9. Icaria phalansterica.
Icaria phalansterica, *Sauss. Mon. Guêpes Soc.* 35. 13. t. 4. f. 5.
Hab. Madagascar.

10. Icaria galimatia.
Icaria galimatia, *Sauss. Mon. Guêpes Soc.* 36. 14.
Hab. Madagascar.

Div. II.—*Species of Australia and Tasmania.*

11. Icaria? Romándi.
Polistes Romandi, *Guillou, Ann. Soc. Ent. Fr.* 1st ser. x. 322.
Icaria? Romandi, *Sauss. Mon. Guêpes Soc.* 41. 6.
Hab. Australia.

12. Icaria revolutionalis.
Icaria revolutionalis, *Sauss. Mon. Guêpes Soc.* 29. 7. t. 5. f. 7.
Hab. New Holland or Tasmania.

13. Icaria Cabeti.
Icaria cabeti, *Sauss. Mon. Guêpes Soc.* 26. 4. t. 5. f. 2.
Hab. Tasmania.

14. Icaria socialistica. B.M.
Icaria socialistica, *Sauss. Mon. Guêpes Soc.* 27. 5.
Hab. Tasmania.

Div. III.—*Species of Africa.*

15. Icaria cincta. B.M.

Epipona cincta, *St. Farg. Hym.* i. 541. 2.
Icaria cincta, *Sauss. Mon. Guêpes Soc.* 39. 18. t. 5. f. 9.
Hab. Senegal; Sierra Leone. (Coll. The Rev. D. F. Morgan.)

16. Icaria guttatipennis. B.M.

Icaria guttatipennis, *Sauss. Mon. Guêpes Soc.* 40. 19. t. 5. f. 8.
Hab. Senegal; Port Natal; the Gambia.

17. Icaria politica.

Icaria politica, *Sauss. Mon. Guêpes Soc. Append.* 240 ♀ ♂.
Hab. Senegal.

18. Icaria clavata.

Icaria clavata, *Sauss. Mon. Guêpes Soc.* 40. 20.
Hab. Cape of Good Hope.

Div. IV.—*Species of India, East India Islands and China.*

19. Icaria aristocratica.

Icaria aristocratica, *Sauss. Mon. Guêpes Soc.* 37. 15.
Hab. India.

20. Icaria ferruginea. B.M.

Vespa ferruginea, *Fabr. Ent. Syst.* ii. 280. 95.
Polistes ferruginea, *Fabr. Syst. Piez.* 277. 39.
Icaria ferruginea, *Sauss. Mon. Guêpes Soc.* 38. 17. t. 5. f. 6.
Hab. India (Madras). (Coll. Walter Elliot, Esq.)

21. Icaria marginata. B.M.

Epipona marginata, *St. Farg. Hym.* i. 541. 3.
Icaria marginata, *Sauss. Mon. Guêpes Soc.* 237.
Hab. India (Madras). (Coll. Walter Elliot, Esq.)

22. Icaria variegata. B.M.

Epipona variegata, *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. ix. 48 (1852).
Icaria variegata, *Sauss. Mon. Guêpes Soc.* 237.
Hab. India (Poonah).

23. Icaria pendula. B.M.

Female. Length 3½ lines.—Ferruginous: covered with a fine short hoary down; the mandibles, a broad stripe behind the eyes, the clypeus, the face as high as the insertion of the antennæ, and the scape in front, yellow; the clypeus with a ferruginous stripe down the centre. Thorax: the anterior and posterior margins of the prothorax, the tegulæ, the basal and lateral margins of the scutellum, the post-scutellum, two broad longitudinal lines on the metathorax, and the breast and legs variegated with yellow; the wings hyaline, with a dark fuscous spot at the apex of the marginal cell. Abdomen: a narrow yellow fascia at the apical margin of the first segment; a large yellow macula on each side of the second at its base, and a broad fascia on its apical margin; the following segments sometimes with yellow fasciæ, sometimes immaculate, very variable in this respect.

Var. The yellow line at the base of the scutellum sometimes interrupted.

Hab. India (Bareily). (Coll. C. Horne, Esq.)

This species closely resembles *Icaria variegata*, but it differs in having the petiole of the abdomen shorter, and in having only the margins of the scutellum yellow; a number of specimens with their nest having been examined and the above differences found to be constant.

24. Icaria formosa. B.M.

Icaria formosa, *Sauss. Mon. Guêpes Soc.* 37. 16.

Hab. India.

25. Icaria artifex. B.M.

Icaria variegata, *Sauss. Mon. Guêpes Soc.* 25. 3. t. 4. f. 3 (nec *Smith*).

Hab. Java; India.

26. Icaria Sumatræ.

Vespa Sumatræ, *Weber, Obs. Entom.* 103. 1.
Vespa mutillata, *Illig. Mag. Ins.* i. 189. 19.
Polistes pubescens, *Fabr. Syst. Piez.* 279. 49.
Icaria Sumatræ, *Sauss. Mon. Guêpes Soc. Append.* 241.

Hab. Sumatra.

27. Icaria speciosa. B.M.

Icaria speciosa, *Sauss. Rev. Zool.* (1855) p. 374.

Hab. Sumatra; Malacca; Borneo. (Coll. A. Wallace.)

The specimens received from Borneo have the basal segment of the abdomen black.

28. Icaria opulenta. B.M.

Female. Length 6-6½ lines.—Black, and covered with a fine short changeable silky pile; the anterior margin of the clypeus angular, and bordered with white; a white spot at the base of the mandibles; the antennæ obscurely ferruginous beneath. The metathorax with a deeply impressed line in the middle and more or less ferruginous towards the apex; the wings subhyaline, with a fuscous stain along the anterior margin of the superior pair, which are also clouded at their apex, the marginal cell darkly so. The first and second segments of the abdomen ferruginous; the apical margins of the following segments obscurely rufo-testaceous.

Hab. Borneo (Sarawak). (Coll. A. Wallace.)

29. Icaria flavo-picta. B.M.

Female. Length 3¼ lines.—Black: the mandibles, clypeus, a broad stripe at the inner orbits of the eyes terminating at their emargination, an interrupted line behind the eyes, and the scape in front, yellow; the flagellum fulvous beneath. The anterior and posterior margins of the prothorax, a spot beneath the wings and a second placed in an oblique direction beneath it, the coxæ, tips of the femora, and the tibiæ outside, yellow; the tegulæ, two longitudinal stripes on the mesothorax, two large ovate spots on the scutellum, the post-scutellum, and the sides of the metathorax, yellow; the wings hyaline and iridescent, the nervures brown; the tarsi rufo-testaceous. Abdomen: the basal segment with an ovate spot on each side at its apex, a waved line on each side of the second segment at its base, its apical margin as well as those of the following segments with a broad fascia, yellow; beneath, the second segment with a yellow spot in the middle at its base.

Hab. Borneo (Sarawak). (Coll. A. Wallace.)

30. Icaria Hongkongensis. B.M.

Icaria Hongkongensis, *Sauss. Mon. Guêpes Soc. Append.* 239 ♀.

Hab. China (Hong Kong).

31. Icaria Philippinensis. B.M.

Icaria Philippinensis, *Sauss. Mon. Guêpes Soc. Append.* 240 ♀.

Hab. Philippine Islands.

32. Icaria Lefebvrei.

Polistes Lefebvrei, *Le Guillou, Ann. Soc. Ent. Fr.* 1 sér. x. 322.

Hab. Triton Bay.

Genus 5. ANTHRENEIDA.

Anthreneida, *White, Ann. & Mag. Nat. Hist.* vii. p. 321 (1841).

1. ANTHRENEIDA CORONATA. B.M.

Anthreneida coronata, *White, Ann. & Mag. Nat. Hist.* vii. p. 321.

Hab. Not known.

Genus 6. POLISTES.

Vespa, pt., *Linn. Faun. Suec.* 418 (1761); *Syst. Nat.* i. (1766). *Fabr. Syst. Ent.* 362 (1775); *Ent. Syst.* ii. 253 (1793).
Polistes, *Latr. Hist. Nat. Ins.* xiii. (1804).
Cyclostoma & Gyrostoma, *Kirby, Introd. Ent.* iii. 631 & 633. ed. 5.
Odynerus, pt., *Spin. Ins. Lig.* ii. (1808).

DIV. I.—*Species of Europe.*

1. POLISTES BIGLUMIS. B.M.

Vespa biglumis, *Linn. Faun. Suec.* 418. 1680; *Syst. Nat.* i. 951. 17.
Müller, Linn. Syst. Nat. Ins. ii. 884. 17.
Fabr. Syst. Ent. 373. 48; *Spec. Ins.* i. 469. 67; *Mant. Ins.* 294. 81; *Ent. Syst.* ii. 271. 64; *Syst. Piez.* 264. 63.
Villers, Ent. iii. 271. 13.
Christ. Hym. 245.
Oliv. Encycl. Méth. vi. 692. 115.
Jurine, Hym. 169.
Panz. Faun. Germ. 53. 7.
Vespa parietum, *Scop. Ent. Carn.* no. 827.
Polistes biglumis, *Sauss. Mon. Guêpes Soc.* 46. 1.

Hab. Sweden.

2. POLISTES GALLICUS. B.M.

Vespa gallica, *Linn. Syst. Nat.* i. 949. 7.
Müll. Edit. Linn. Ins. ii. 881. 7.
Fabr. Spec. Ins. i. 460. 10; *Mant. Ins.* i. 287. 11; *Ent. Syst.* ii. 257. 13.
Rossi, Faun. Etrus. ii. 83. 862.
Schrank, Ins. Austr. 789.
Villers, Ent. iii. 266. 5.
Christ. Hym. 233.

Vespa gallica, *Walcken. Faun. Par.* ii. 91.
Latr. Ann. Mus. i. 291.
Spin. Ins. Lig. i. 82, & ii. 183.
Vespa parietum, *Scop. Ent. Carn.* no. 827. var. 1.
Poda, Mus. Græc. 108.
Vespa bimaculata, *Fourc. Ent. Par.* ii. 433. 5.
Vespa dominula, *Christ. Hym.* 229. t. 21. f. 1.
Vespa nimpha, *Christ. Hym.* 232. t. 1. f. 2.
Polistes Gallicus, *Latr. Hist. des Crust. et Ins.* viii. 348.
Panz. Faun. Germ. 49. 22.
St. Farg. Encycl. Méth. x. 172. 6; *Hym.* i. 527. t. 9. f. 4, 6.
Blanch. Règn. An. Illustr. Ins. t. 124. f. 6; *Hist. des Ins.* i. 66. t. 2. f. 6, 7.
Sauss. Mon. Guêpes Soc. 48. 2.
Polistes Lefebvrii, *Guérin, Icon. Règn. An. Ins.* 447. t. 72. f. 6.
Polistes pectoralis, *Herr.-Schæff. Faun. Germ.* 179. t. 6. f. 39.
Polistes Italica, *Herr.-Schæff. Faun. Germ.* p. 39.
Réaum. Mém. Ins. vi. t. 25. f. 6.
Savigny, Descr. de l'Egypt. Hym. t. 8. f. 2.

Hab. Europe; Egypt.

3. Polistes diadema. B.M.

Vespa diadema, *Latr. Ann. Mus.* i. 292. t. 21. f. 4–6.
Polistes diadema, *Latr. Hist. des Crust. et Ins.* xiii. 349.
St. Farg. et Serv. Encycl. x. 173. 7.
Herr.-Schæff. Faun. Germ. 179. 40.
St. Farg. Hym. i. 528.
Ménétr. Mém. de l'Acad. Imp. des Sc. de St. Péters. vi. 307. 986.
Sauss. Mon. Guêpes Soc. Append. 243.
Polistes Geoffroyi, *St. Farg. Hym.* i. 527.

Hab. Europe.

4. Polistes Bucharensis.

Polistes Bucharensis, *Ménétr. Mém. de l'Acad. Imp. des Sc. de St. Péters.* vi. 307. 985 (1849).

Hab. Wallachia (Bucharest).

Div. II.—*Species of India and East India Islands.*

5. Polistes hebræus. B.M.

Vespa hebræa, *Fabr. Mant. Ins.* i. 292. 58; *Ent. Syst.* ii. 274. 74.
Oliv. Encycl. Méth. vi. 690. 105.

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Polistes hebræa, *Fabr. Syst. Piez.* 273. 21.
St. Farg. Hym. i. 525. 12.
Polistes Macaensis, *Fabr. Syst. Piez.* 272. 12.
Westw. Ins. Ind. 91. t. 57. f. 4.
Vespa undata, *Oliv. Encycl. Méth.* vi. 684. 72.
Polistes hebræus, *Sauss. Mon. Guêpes Soc.* 53. 10.
Hab. India; China; Persia; Isle of France.

6. POLISTES ORIENTALIS. B.M.

Cyclostoma orientalis, *Kirby, Introd. Ent.* iii. 633. ed. 1. ♂.
Gyrostoma orientalis, *Kirby, Introd. Ent.* iii. 631. ed. 5.
Hab. India; China.

7. POLISTES CONFUSUS. B.M.

Polistes orientalis, *St. Farg. Hym.* i. 519 ♀.
Sauss. Mon. Guêpes Soc. 251.
Polistes Schach, *Sauss. Mon. Guêpes Soc.* 50. 3.
Hab. India; China.

The *Polistes confusus* is in all probability the female of *P. orientalis*; all the specimens known which agree with Kirby's insect are males.

8. POLISTES HOPLITES.

Polistes hoplites, *Sauss. Mon. Guêpes Soc.* 55. 11. & p. 255.
Hab. India.

9. POLISTES STIGMA. B.M.

Vespa stigma, *Fabr. Ent. Syst.* ii. 275. 78.
Vespa tamula, *Fabr. Ent. Syst. Supp.* 263. 78.
Polistes tamula, *Fabr. Syst. Piez.* 274. 27.
Polistes stigma, *Fabr. Syst. Piez.* 261. 41.
Sauss. Mon. Guêpes Soc. 64. 21. t. 6. f. 3.
Hab. India; Ceram; Celebes. (Coll. Madame Ida Pfeiffer.)

10. POLISTES SAGITTARIUS. B.M.

Polistes sagittarius, *Sauss. Mon. Guêpes Soc.* 56. 12.

Var. Specimens from Greece have the thorax and second segment of the abdomen ferruginous.
Hab. India; China; Greece.

11. POLISTES TENEBRICOSUS.

Polistes tenebricosus, *St. Farg. Hym.* i. 529. 17.
Sauss. Mon. Guêpes Soc. 51. 5.

Hab. Java.

12. POLISTES MACULIPENNIS.

Polistes maculipennis, *Sauss. Mon. Guêpes Soc.* 61. 19. t. 6. f. 4.

Hab. Java.

13. POLISTES DIABOLICUS. B.M.

Polistes diabolicus, *Sauss. Mon. Guêpes Soc.* 68. 26. t. 6. f. 7.

Hab. Java; Timor.

14. POLISTES CALLIMORPHUS.

Polistes callimorpha, *Sauss. Mon. Guêpes Soc.* 71. 31. & p. 25ɔ. t. 10. f. 1.

Hab. Island of Timor.

15. POLISTES LATERITIUS. B.M.

Female. Length 9 lines.—Brick-red: the basal segment of the abdomen, the metathorax, the posterior portion of the metathorax beneath the wings and the intermediate and posterior coxæ, black; a line on the inner orbit of the eyes, a transverse line at the base of the post-scutellum, the filaments on each side of the insertion of the abdomen and an abbreviated longitudinal line on each side of the metathorax, yellow; the posterior margin of the three basal segments of the abdomen with obscure yellow fasciæ; the wings yellowish hyaline.

Male.—Closely resembles the female, but with the face, scape in front and the mandibles, yellowish; the metathorax black only at the apex.

Hab. Ceram.

DIV. III.—*Species of China and the Philippines.*

16. POLISTES CHINENSIS. B.M.

Vespa Chinensis, *Fabr. Ent. Syst.* ii. 261. 29.
Polistes Chinensis, *Fabr. Syst. Piez.* 270. 6.
Sauss. Mon. Guêpes Soc. 56. 13. t. 7. f. 2.
Vespa bimaculata, *Oliv. Encycl. Méth.* vi. 678. 46 (var.?).

Hab. China; Hong Kong; North China (Shanghai).

17. POLISTES MANDARINIUS. B.M.

Polistes mandarinius, *Sauss. Mon. Guêpes Soc.* 58. 15.

Hab. North China (Shanghai).

18. POLISTES SULCATUS.

Polistes sulcatus, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 38.
Sauss. Mon. Guêpes Soc. 59. 16.

Hab. North China (Ning-Po-Foo).

This may possibly prove to be an extreme variety of *P. orientalis.*

19. POLISTES PHILIPPINENSIS. B.M.

Polistes Philippinensis, *Sauss. Mon. Guêpes Soc.* 58. 14.

Hab. Philippine Islands.

20. POLISTES MANILLENSIS. B.M.

Polistes Manillensis, *Sauss. Mon. Guêpes Soc.* 70. 30.

Hab. Philippine Islands.

DIV. IV.—*Species of Africa and Madagascar.*

21. POLISTES FLAVIPENNIS.

Polistes flavipennis, *Sauss. Mon. Guêpes Soc.* 52. 7.

Hab. Cape of Good Hope.

22. POLISTES RUBIDUS.

Polistes rubidus, *St. Farg. Hym.* i. 523. 8 ♂.
Sauss. Mon. Guêpes Soc. 50. 4.

Hab. Cape of Good Hope.

23. POLISTES FASTIDIOSUS. B.M.

Polistes fastidiosus, *Sauss. Mon. Guêpes Soc.* 60. 18.

Hab. Gambia. (Coll. Lieut. Rendall.)

24. POLISTES SMITHII. B.M.

Polistes Smithii, *Sauss. Mon. Guêpes Soc.* 60. 17. t. 7. f. 3.

Hab. Gambia; South Africa. (Coll. Dr. Andrew Smith.) Sierra Leone. (Coll. The Rev. D. F. Morgan.)

25. POLISTES MARGINALIS. B.M.

Vespa marginalis, *Fabr. Syst. Ent.* 367. 24; *Spec. Ins.* i. 463. 29; *Mant. Ins.* i. 289. 34; *Ent. Syst.* ii. 264. 42.
Christ. Hym. 240.
Oliv. Encycl. Méth. vi. 685. 79.
Polistes marginalis, *Fabr. Syst. Piez.* 272. 17.
Sauss. Mon. Guêpes Soc. 62. 20. t. 6. f. 2.
Polistes Africana, *Palis. de Beauv. Ins. d'Afr. et d'Amér.* 207. t. 8. f. 4.
Polistes ornata, *St. Farg. Hym.* i. 531. 19.

Hab. Africa; South Africa. (Coll. Dr. Andrew Smith.) Sierra Leone. (Coll. The Rev. D. F. Morgan.)

26. POLISTES MADECASSUS.

Polistes Madecassus, *Sauss. Mon. Guêpes Soc.* 51. 6.

Hab. Madagascar.

DIV. V.—*Species of Australia and Tasmania.*

27. POLISTES SCHACH.

Vespa Schach, *Fabr. Spec. Ins.* i. 461. 18; *Mant. Ins.* i. 288. 21; *Ent. Syst.* ii. 260. 25.
Oliv. Encycl. Méth. vi. 682. 60.
Polistes Schach, *Fabr. Syst. Piez.* 270. 2.
Sauss. Mon. Guêpes Soc. 50. 3.

Hab. New Holland.

28. POLISTES FACILIS.

Polistes facilis, *Sauss. Mon. Guêpes Soc.* 53. 9.

Hab. New Holland.

29. POLISTES SYNŒCUS.

Polistes synœcus, *Sauss. Mon. Guêpes Soc.* 65. 22. t. 6. f. 5.

Hab. New Holland.

30. POLISTES TASMANIENSIS. B.M.

Polistes Tasmaniensis, *Sauss. Mon. Guêpes Soc.* 66. 23. t. 6. f. 6.

Hab. New Holland (Hunter River).

31. POLISTES VARIABILIS.

Vespa variabilis, *Fabr. Ent. Syst.* ii. 274. 73.
Oliv. Encycl. Méth. vi. 690. 104.
Polistes variabilis, *Fabr. Syst. Piez.* 273. 20.
Sauss. Mon. Guêpes Soc. 66. 24.

Hab. New Holland. (Coll. Banks. Mus. Linn. Soc.)

32. POLISTES TRICOLOR. B.M.

Polistes tricolor, *Sauss. Mon. Guêpes Soc.* 67. 25.

Hab. New Holland.

33. POLISTES TEPIDUS. B.M.

Vespa tepida, *Fabr. Syst. Ent.* 366. 17; *Spec. Ins.* i. 462. 21; *Ent. Syst.* ii. 262. 31; *Mant. Ins.* i. 289.
Christ. Hym. 242.
Oliv. Encycl. Méth. vi. 682. 64.
Polistes tepida, *Fabr. Syst. Piez.* 271. 7.
Polistes tepidus, *Sauss. Mon. Guêpes Soc.* 68. 27. t. 8. f. 1.

Hab. New Holland; New Guinea; Solomon Islands. (Voyage of H.M.S. Herald.)

34. POLISTES PICTETI. B.M.

Polistes Picteti, *Sauss. Mon. Guêpes Soc.* 69. 28. t. 6. f. 8.

Hab. New Holland; Ceram. (Coll. Madame Ida Pfeiffer.)

35. POLISTES BERNARDII.

Polistes Bernardii, *Guillou, Ann. Soc. Ent. Fr.* 1st ser. x. 321.
Sauss. Mon. Guêpes Soc. 70. 29.

Hab. Australia.

36. POLISTES HUMILIS. B.M.

Vespa humilis, *Fabr. Spec. Ins.* i. 461. 20; *Mant. Ins.* i. 288. 23; *Ent. Syst.* ii. 261. 28.
Oliv. Encycl. Méth. vi. 682. 62.
Polistes humilis, *Fabr. Syst. Piez.* 270. 5.
Sauss. Mon. Guêpes Soc. 52. 8.

Hab. Tasmania; New Holland (Port Stephen).

DIV. VI.—*Species of Brazil, Cayenne, South America, Cuba.*

37. POLISTES ATERRIMUS.

Polistes aterrimus, *Sauss. Mon. Guêpes Soc.* 73. 33.

Hab. Brazil (Amazons). (Coll. J. S. Baly, Esq.)

38. POLISTES MELANOSOMA. B.M.
Polistes melanosoma, *Sauss. Mon. Guêpes Soc.* 76. 36.
Hab. Brazil (Goyaz).

39. POLISTES SPINOLÆ.
Polistes Spinolæ, *Sauss. Mon. Guêpes Soc.* 80. 43.
Hab. Brazil.

40. POLISTES PACIFICUS.
Polistes pacificus, *Fabr. Syst. Piez.* 274. 28.
Sauss. Mon. Guêpes Soc. 84. 46.
Hab. Para.

41. POLISTES BINOTATUS.
Polistes binotatus, *Sauss. Mon. Guêpes Soc.* 87. 50. t. 7. f. 6.
Hab. Brazil.

42. POLISTES OPALINUS.
Polistes opalinus, *Sauss. Mon. Guêpes Soc.* 89. 52. t. 12. f. 6.
Hab. Brazil.

43. POLISTES CINERASCENS.
Polistes cinerascens, *Sauss. Mon. Guêpes Soc.* 99. 61. t. 10. f. 4.
Hab. Brazil.

44. POLISTES SUBSERICEUS. B.M.
Polistes subsericeus, *Sauss. Mon. Guêpes Soc.* 100. 62. t. 12. f. 7.
Hab. Brazil.

45. POLISTES LILIACEUSCULUS.
Polistes liliaceusculus, *Sauss. Mon. Guêpes Soc.* 98. 59.
Hab. Para.

46. POLISTES LILIACIOSUS. B.M.
Polistes liliaciosus, *Sauss. Mon. Guêpes Soc.* 97. 58. t. 11. f. 7.
Hab. Brazil.

47. POLISTES CAVAPYTA.

Polistes Cavapyta, *Sauss. Mon. Guêpes Soc.* 87. 51. t. 11. f. 8.

Hab. La Plata.

48. POLISTES BICOLOR. B.M.

Polistes bicolor, *St. Farg. Hym.* i. 521. 4.
Sauss. Mon. Guêpes Soc. 76. 37.

Hab. Cayenne; Surinam.

49. POLISTES ANALIS. B.M.

Vespa analis, *Fabr. Ent. Syst. Supp.* 261. 40.
Polistes analis, *Fabr. Syst. Piez.* 272. 15.
Sauss. Mon. Guêpes Soc. 80. 42.

Hab. Cayenne.

50. POLISTES VERSICOLOR. B.M.

Vespa versicolor, *Oliv. Encycl. Méth.* vi. 692. 114.
Vespa myops, *Fabr. Ent. Syst. Supp.* 261. 40.
Polistes myops, *Fabr. Syst. Piez.* 272. 16.
Sauss. Mon. Guêpes Soc. 81. 44. t. 7. f. 5, t. 8. f. 6. (var.)

Var. Specimens from St. Domingo in the British Museum are much more highly coloured than any described; the metathorax is almost entirely yellow, and the abdominal segments have broad continuous yellow bands.

Hab. Cayenne; Brazil (Amazons); St. Domingo.

51. POLISTES CRINITA. B.M.

Vespa crinita, *Felton, Phil. Trans.* liv. 53. t. 6 (1773).
Vespa Americana, *Fabr. Syst. Ent.* 370. 38; *Spec. Ins.* i. 467. 52; *Mant. Ins.* i. 292. 64; *Ent. Syst.* ii. 276. 81.
Christ. Hym. 243.
Oliv. Encycl. Méth. vi. 691. 111.
Vespa tricolor, *Fabr. Syst. Ent.* 369. 32; *Spec. Ins.* i. 465. 43; *Mant. Ins.* i. 291. 52; *Ent. Syst.* ii. 271. 67; *Syst. Piez.* 266. 70.
Christ. Hym. 225.
Oliv. Encycl. Méth. vi. 689. 58.
Polistes Billardieri, *Fabr. Syst. Piez.* 274. 26.
Vespa multicolor, *Oliv. Encycl. Méth.* vi. 691. 113.
Polistes Americana, *Fabr. Syst. Piez.* 275. 29.
Sauss. Mon. Guêpes Soc. 93. 55. t. 11. f. 4, 5.

Hab. Cayenne.

52. POLISTES ACTÆON.

Polistes Actæon, *Halid. Trans. Linn. Soc. Lond.* xvii. 323. 32.
Sauss. Mon. Guêpes Soc. 98. 60. t. 11. f. 2.

Hab. Cayenne; Columbia.

53. POLISTES FERRERI.

Polistes Ferreri, *Sauss. Mon. Guêpes Soc.* 77. 39.

Hab. South America.

54. POLISTES RUFICORNIS.

Polistes ruficornis, *Sauss. Mon. Guêpes Soc.* 85. 48. t. 11. f. 3.

Hab. South America.

55. POLISTES BIGUTTATUS.

Polistes biguttatus, *Halid. Trans. Linn. Soc. Lond.* xvii. 323. 30.
Sauss. Mon. Guêpes Soc. 86. 49.

Hab. South America.

56. POLISTES CARNIFEX. B.M.

Vespa carnifex, *Fabr. Syst. Ent.* 365. 4; *Spec. Ins.* i. 461. 16; *Mant. Ins.* i. 288. 19; *Ent. Syst.* ii. 260. 23.
Christ. Hym. 239.
Oliv. Encycl. Méth. vi. 681. 58.
Polistes carnifex, *Fabr. Syst. Piez.* 272. 13.
Sauss. Mon. Guêpes Soc. 90. 53. t. 10. f. 5.
Polistes rufipennis, *Latr. Voy. Humb. et Bonpl. Ins.* ii. t. 79. no. 133. t. 38. f. 4.
Polistes major, *Palis. de Beauv. Ins. d'Afr. et Amér.* 206. t. 8. f. 1.
Polistes chlorostoma, *St. Farg. Hym.* i. 521. 5.
Polistes onerata, *St. Farg. Hym.* i. 524. 11.
Polistes valida, *Say, North Amer. Hym.* 389. 3.
Polistes transversosignatus, *Spin. Voy. Entom. de Ghill.* 62.

Hab. St. Domingo; Mexico; South America.

57. POLISTES LINEATUS.

Vespa lineata, *Fabr. Spec. Ins.* i. 461. 15; *Mant. Ins.* i. 288. 17; *Ent. Syst.* ii. 259. 20.
Oliv. Encycl. Méth. vi. 581. 56.
Polistes lineata, *Fabr. Syst. Piez.* 271. 9.
Polistes lineatus, *Sauss. Mon. Guêpes Soc.* 95. 56. t. 11. f. 6.
Polistes Cubensis, *St. Farg. Hym.* i. 526. 13.

Hab. South America.

58. POLISTES RUFIDENS.

Polistes rufidens, *Sauss. Mon. Guêpes Soc.* 77. 38.

Hab. Venezuela.

Div. VII.—*Species of Mexico and North America.*

59. POLISTES INSTABILIS. B.M.

Polistes instabilis, *Sauss. Mon. Guêpes Soc.* 91. 54. t. 10. f. 1, var. t. 11. f. 1.

Hab. Mexico; East Florida; Mount Pleasant, Ohio. (Coll. E. Doubleday, Esq.) New York. (Coll. R. Foster, Esq.)

60. POLISTES EXILIS.

Polistes exilis, *Sauss. Mon. Guêpes Soc.* 85. 47. t. 12. f. 5.

Hab. North America.

61. POLISTES PALLIPES. B.M.

Polistes pallipes, *St. Farg. Hym.* i. 530. 18.
Sauss. Mon. Guêpes Soc. 82. 45. t. 12. f. 1, 2, 3, 4.

Hab. North and South America (East Florida; Ohio; Wilmington; Delaware). (Coll. E. Doubleday, Esq.)

62. POLISTES ANNULARIS. B.M.

Vespa annularis, *Linn. Syst. Nat.* i. 950. 9; *Amœnit. Acad.* vi. 413. 93.
Muell. Ed. Linn. Ins. ii. 882. 9.
Fabr. Syst. Ent. 366. 16; *Spec. Ins.* i. 461. 19; *Mant. Ins.* i. 288. 22; *Ent. Syst.* ii. 950. 9.
De Geer, Mém. Ins. iii. 583. 7. t. 29. f. 11.
Oliv. Encycl. Méth. vi. 682. 61.
Illig. Cent. Ins. 30. no. 93.
Polistes annularis, *St. Farg. Hym.* i. 522. 7.
Sauss. Mon. Guêpes Soc. 79. 41. t. 8. f. 4.
Polistes cincta, *St. Farg. Hym.* i. 522. 6.

Hab. North and South America.

63. POLISTES AURIFER. B.M.

Polistes aurifer, *Sauss. Mon. Guêpes Soc.* 78. 40.

Hab. California.

64. POLISTES METRICUS. B.M.

Polistes metrica, *Say, Bost. Journ. Nat. Hist.* i. 388. 1.
Sauss. Mon. Guêpes Soc. 75. 35. t. 7. f. 4.

Hab. North America.

65. POLISTES RUBIGINOSUS. B.M.

Polistes rubiginosus, *St. Farg. Hym.* i. 524. 10.
Sauss. Mon. Guêpes Soc. 74. 34.

Hab. Philadelphia.

66. POLISTES CANADENSIS. B.M.

Vespa Canadensis, *Linn. Syst. Nat.* i. 952. 25.
De Geer, Ins. iii. 580. 3. t. 29. f. 7.
Sulz. Hist. Ins. t. 19. f. *a*.
Réaum. Mém. Ins. vi. 169. t. 17. f. 4.
Christ. Hym. 225.
Oliv. Encycl. Méth. vi. 684. 74.
Vespa marribosus, *Linn. Syst. Nat.* i. 952. 26.
Christ. Hym. 217.
Vespa nigripennis, *De Geer, Ins.* iii. 582. t. 29. f. 10.
Oliv. Encycl. Méth. vi. 684.
Vespa lanio, *Fabr. Syst. Ent.* 365. 15; *Spec. Ins.* i. 461. 17; *Mant. Ins.* i. 288. 20; *Ent. Syst.* ii. 260. 24.
Oliv. Encycl. Méth. vi. 681. 59.
Polistes lanio, *Fabr. Syst. Piez.* 269. 1; *Smith, Trans. Ent. Soc. Lond.* new ser. i. 176. t. 16. f. 1.
Polistes infuscata, *St. Farg. Hym.* i. 520. 2.
Polistes unicolor, *St. Farg. Hym.* i. 520. 3.
Polistes erythrocephala, *Latr. Voy. Humb. et Bonpl. Ins.* ii. 96. no. 132. t. 38. f. 3.
Polistes Canadensis, *Sauss. Mon. Guêpes Soc.* 72. 32. t. 1. f. 1.

Hab. North and South America.

67. POLISTES OCULATUS. B.M.

Male. Length 7 lines.—Black: the head and thorax densely covered with short fulvous pubescence; the face as high as the emargination of the eyes, the mandibles, outer orbits of the eyes, and the scape in front, yellow; the flagellum ferruginous above, with the two basal joints as well as the scape above, fuscous; the eyes very large, prominent, and approximating more than is usual in this genus. Thorax: a narrow line on the prothorax in front, a similar one on the posterior margin, a spot beneath the wings, the pectus, coxæ and femora in front, the tegulæ, two

obscure spots on the scutellum, and two narrow longitudinal lines on the metathorax, yellow; the metathorax is delicately striated transversely and has a deeply impressed fovea in the middle; the legs ferruginous, with the intermediate and posterior coxæ and femora, and also the posterior tibiæ behind, black. Abdomen ferruginous, with the base of the first and second segments black; their apical margins with a narrow yellow fascia; beneath, the margins of all the segments with a yellow fascia.

Hab. Mexico.

68. POLISTES MINOR.

Polistes minor, *Palis. de Beauv. Ins. d'Afr. et d'Amér.* 207. t. 8. f. 3.
Sauss. Mon. Guêpes Soc. 96. 57. t. 11. f. 3.
Polistes Poeyi, *St. Farg. Hym.* i. 532. 20.

Hab. Cuba.

Genus 7. APOICA.

Vespa, pt., *Oliv. Encycl. Méth. Ins.* vi. 675 (1791).
Polistes, pt., *Fabr. Syst. Piez.* 276 (1804).
Apoica, *St. Farg. Hym.* i. 536 (1836).

1. APOICA PALLIDA. B.M.

Vespa pallida, *Oliv. Encycl. Méth. Ins.* vi. 675. 26.
Polistes pallens, *Fabr. Syst. Piez.* 276. 35.
Apoica pallida, *St. Farg. Hym.* i. 538. 2.
Sauss. Mon. Guêpes Soc. 107. 1. t. 18. f. 1.

Hab. Brazil (Para); South America; Cayenne; Buenos Ayres.

2. APOICA VIRGINEA. B.M.

Polistes virginea, *Fabr. Syst. Piez.* 277. 37.
Apoica bilineolata, *St. Farg. Hym.* i. 537. 1.
Apoica virginea, *Sauss. Mon. Guêpes Soc.* 107. 2. t. 18. f. 2.

Hab. South America.

3. APOICA ARBOREA.

Apoica arborea, *Sauss. Mon. Guêpes Soc.* 108. 3. t. 26. f. 1.

Hab. South America. (Coll. J. S. Baly, Esq.)

4. APOICA CUBITALIS.

Apoica cubitalis, *Sauss. Mon. Guêpes Soc.* 109. 4. t. 18. f. 3.

Hab. Bahia.

Genus 8. VESPA.

Vespa, pt., *Linn. Syst. Nat.* i. 948 (1766).
Crabro, pt., *Christ. Hym.* 217 (1791).
Sphex, pt., *Sulz. Hist. Ins.* (1761).

Div. I.—*Species of Europe.*

1. Vespa vulgaris. B.M.

Vespa vulgaris, *Linn. Faun. Suec.* 415. no. 1671; *Syst. Nat.* i. 949. 4; ♀. *Mus. Linn. Soc.*
Scop. Ent. Carn. 825.
De Geer, Ins. ii. pt. 2. 766. t. 26. f. 1–15.
Fabr. Syst. Ent. 364. 9; *Spec. Ins.* i. 460. 9; *Mant. Ins.* i. 287. 10; *Ent. Syst.* ii. 256. 10; *Syst. Piez.* 255. 9.
Muell. Faun. Fried. no. 635.
Harris, Expos. Engl. Ins. 128. t. 37. f. 5.
Frisch, Ins. ix. t. 12. f. 2.
Schrank, Enum. Ins. Austr. no. 787.
Schæff. Elem. Ins. t. 130; *Icon. Ins.* t. 35. f. 4.
Fourc. Ent. Par. ii. 430. 2.
Villers, Entom. iii. 263. 2.
Rossi, Faun. Etrus. ii. 83. 861.
Christ. Hym. 236. t. 22. f. 2.
Panz. Faun. Germ. 49. 19.
Don. Brit. Ins. vii. t. 266.
Latr. Ann. Mus. Hist. Nat. i. 288; *Hist. Nat. des Crust. et Ins.* xiii. 351. 3.
Zett. Ins. Lapp. 453. 2.
Walck. Faun. Par. ii. 91. 4.
Bing. Anim. Biog. iii. 341.
Stew. Elem. Nat. Hist. ii. 238.
Lamarck, Hist. Nat. Anim. sans Vert. iv. 88. 2.
Samouelle, Compend. 280. 2.
Kirby & Spence, Introd. Ent. ii. 106.
Kirby, Faun. Bor. Amer. 263?
Brullé, Hist. Nat. Il. Canar. ii. pt. 2. 89.
St. Farg. Hym. i. 516. 14. t. 10.
Herr.-Schæff. Faun. Germ. 179. 3 *a*. p. 36.
Smith, Zool. i. 162. f. 2 *a–f*.
Blanch. Hist. des Ins. i. 62. t. 3. f. 3.
Sauss. Mon. Guêpes Soc. 113. t. 14. f. 3, 3 *a–e*.
Vespa Saxonica, *Fabr. Ent. Syst.* ii. 256. 12 ♂?
Aristot. Hist. An. i. ix. 41.
Plin. Hist. Nat. i. xi. c. 21.
Aldrov. Ins. 198.

Vespa Saxonica, *Schwenkf.* (Vespa major) *Theriotr. Siles.* 561.
Swammerd. Bibl. Nat. t. 26. f. 8.
Mouff. Theat. Ins. 52. f. 1, 2.
Ray (Vespa sylvestris), *Ins.* 252.
Cloquet (Guêpe commune), *Faune des Médec.* v. 302. 304. 305.

Hab. Europe.

Probably many of the above quotations refer to the *V. Germanica,* which has been usually regarded as a variety of *V. vulgaris,* but it is impossible to determine this point satisfactorily.

2. VESPA GERMANICA. B.M.

Vespa vulgaris, *Muell. Edit. Linn. Ins.* ii. 880. 4. t. 27. f. 3.
Blanch. Règne Anim. t. 124. f. 5.
Smith, Zool. i. 162. 2*f*, *a—f.* (var.)
Vespa maculata, *Scop. Ent. Carn.* no. 831?
Christ. Hym. 240.
Vespa Germanica, *Fabr. Ent. Syst.* ii. 256. 12 ♂; *Syst. Piez.* 256. 10.
St. Farg. Hym. i. 515. 13.
Panz. Faun. Germ. 49. 20 ☿.
Herr.-Schæff. Faun. Germ. 179. 2. p. 35.
Smith, Zool. ix.; *Append.* clxxvii.
Sauss. Mon. Guêpes Soc. 116. 3. t. 14. f. 4, 4 *a–c.*

Hab. Europe.

3. VESPA RUFA. B.M.

Vespa rufa, *Linn. Faun. Suec.* no. 1672; *Syst. Nat.* 949. 5.
Fabr. Syst. Ent. 364. 10; *Spec. Ins.* i. 460. 11; *Mant. Ins.* i. 388. 12; *Ent. Syst.* ii. 258. 15; *Syst. Piez.* 256. 13.
Muell. Faun. Friedr. no. 636.
Sulzer, Gesch. Ins. t. 27. f. 13.
Schrank, Ins. Austr. 788.
Villers, Ent. iii. 264. 3.
Oliv. Encycl. Méth. vi. 680. 51.
Christ. Hym. 236. t. 22. f. 3.
Latr. Hist. Nat. des Crust. et Ins. xiii. 352. 5.
Zett. Ins. Lapp. 454. 4.
St. Farg. Hym. i. 517. 15.
Curtis, Brit. Ent. xvi. t. 760.
Herr.-Schæff. Faun. Germ. 179. 5. p. 37.
Blanch. Hist. des Ins. 62. t. 3. f. 1.
Smith, Zool. i. 167. 3*f*, *g*, *h*, *i.*
Ménétr. Mém. Acad. Imp. des Sc. de St. Péters. vi. 304 (1848).
Sauss. Mon. Guêpes Soc. 120. 4. t. 14. f. 5, 5 *a.*
Ray (Vespa sylvestris, vulgari similis, &c.), *Ins.* 252.

Hab. Europe.

4. VESPA ARBOREA. B.M.

Vespa borealis, *Smith, Zool.* i. 176. 6 (nec *Kirby*, nec *Zett.*).
Vespa arborea, *Smith, Zool.* vii.; *Supp.* lx.
Sauss. Mon. Guêpes Soc. 122. 5. t. 14. f. 8, 8 *a*.

Hab. Britain; Switzerland.

5. VESPA SYLVESTRIS. B.M.

Vespa sylvestris, *Scop. Ent. Carn.* 826.
Villers, Entom. iii. 274. 18.
Christ. Hym. 235. t. 22. f. 1 *a, b*.
Oliv. Encycl. Méth. vi.
Smith, Cat. Brit. Ent. 49. 5.
Sauss. Mon. Guêpes Soc. 123. 6. t. 14. f. 6.
Vespa holsatica, *Fabr. Ent. Syst.* ii. 257. 14; *Syst. Piez.* 256. 12.
Latr. Ann. Mus. Hist. Nat. i. 288. t. 21. f. 1–3; *Hist. Nat. Crust. et Ins.* xiii. 352.
Smith, Zool. i. 168. 4. f. *k, l, m*.
Vespa crassa, *Herr.-Schæff. Faun. Germ.* 179. 4. p. 34.
Vespa arbustorum, *Blanch. Hist. des Ins.* i. 62. t. 3. f. 2.

Hab. Europe.

6. VESPA SAXONICA. B.M.

Vespa Saxonica, *Fabr. Ent. Syst.* ii. 256. 12; *Syst. Piez.* 256. 11.
Panz. Faun. Germ. 49. 21.
Herr.-Schæff. Faun. Germ. 179. 37.
Sauss. Mon. Guêpes Soc. 126. 7.
Vespa sexcincta, *Panz. Faun. Germ.* 63. 1.
Herr.-Schæff. Faun. Germ. 149. 36.
Vespa vulgaris, *Linn.* (var. ♂?)

Hab. Europe.

7. VESPA NORWEGICA. B.M.

Vespa Norwegica, *Fabr. Spec. Ins.* i. 460. 11; *Mant. Ins.* i. 288. 13; *Ent. Syst.* ii. 258. 16; *Syst. Piez.* 256. 14.
Gmelin, Edit. Linn. i. 2751. 41.
Villers, Entom. iii. 275. 20.
Oliv. Encycl. Méth. vi. 680. 52.
Panz. Faun. Germ. 81. 16.
Zett. Ins. Lapp. 454. 5.
Herr.-Schæff. Faun. Germ. 37.
Smith, Zool. x. 370. 1.
Sauss. Mon. Guêpes Soc. 128. 8. t. 14. f. 7.

Vespa Britannica, *Leach, Zool. Miscel.* i. 112. t. 50. f. 1 ♂, 2 ♀, 3 ☿.
Sam. Compend. i. 43.
Steph. Syst. Cat. 370. 50. 33.
Smith, Zool. i. 169. 5.
Vespa borealis, *Zett. Ins. Lapp.* 454.

Hab. Europe.

Note.—M. Saussure considers the *Vespa Britannica* of Leach synonymous with *V. sylvestris*; that this is an error, is proved by an examination of the identical specimens, which are figured in the 'Zoological Miscellany;' the specimen of the female is one having only a slight tinge of red on each side of the second segment of the abdomen, which is the characteristic of a large majority of the British examples of this sex of the species, but it is not indicated in the figure; in the figure of the male the rufous spot is omitted; but in that of the worker, the black band on the second segment is obliterated on each side, leaving only the transverse black stripe so characteristic of the species: the specimens figured by Dr. Leach are in the collection of the British Museum, and each one has the name *Britannica*, in Leach's handwriting, attached to the specimen; this places the matter beyond a doubt. It may also be well to mention the fact, that in a whole brood of *Vespa Norwegica* obtained from the North of England, not more than a dozen of the females had the red spot at the sides of the second abdominal segment; in *Vespa Norwegica* the second black band is not produced into an angular point on its lower margin in the middle, but in *Vespa sylvestris* it is always so.

8. VESPA MEDIA.

Vespa media, *De Geer, Mém. Ins.* ii. 790. t. 27. f. 2–7.
Oliv. Encycl. Méth. vi. 679. 49.
Latr. Hist. Nat. des Crust. et Ins. xiii. 351.
Sauss. Mon. Guêpes Soc. 129. 9. t. 14. f. 9.
Vespa Crabro medius, *Villers, Linn. Ent.* iii. 273. 17.
Vespa Austriaca, *Panz. Faun. Germ.* 63. t. 2 *a* (var.).
Vespa Geerii, *St. Farg. Hym.* i. 510.

Hab. North of Europe.

9. VESPA CRABRO. B.M.

Vespa Crabro, *Linn. Faun. Suec.* no. 1670; *Syst. Nat.* i. 948. 3.
De Geer, Ins. ii. 801. t. 27.
Mueller, Edit. Linn. Ins. ii. 880. 3.
Gmelin, Edit. Linn. i. 2750. 3.

Vespa Crabro, *Fabr. Syst. Ent.* 364. 8; *Spec. Ins.* i. 459. 8; *Mant. Ins.* i. 287. 9; *Ent. Syst.* ii. 255. 9; *Syst. Piez.* 255. 8.
Muell. Faun. Friedr. 634.
Scop. Ent. Carn. no. 824.
Harris, Expos. Engl. Ins. 127. t. 24. f. 1, 2, 3.
Schrank, Ins. Austr. 786.
Fourc. Ent. Par. ii. 430. 1.
Schæff. Icon. Ins. Ratisb. t. 53. f. 5, t. 136. f. 3.
Poda, Mus. Græc. 108.
Villers, Ent. iii. 262. 1.
Rossi, Faun. Etrus. ii. 83. 860.
Christ. Hym. 215. t. 18. f. 3.
Don. Brit. Ins. xiv. 85. t. 502.
Walcken. Faun. Par. ii. 90.
Latr. Hist. Nat. des Crust. et Ins. xiii. 350.
Imhoff, Ins. der Schweiz, i. iii. f. 1.
Zett. Ins. Lapp. 435. 1.
St. Farg. Hym. i. 509. 7. t. 9. f. 1–3.
Smith, Cat. Brit. Hym. 48. 1.
Sauss. Mon. Guêpes Soc. 130. 10.
Aldrov. Ins. 225.
Swammerd. Bibl. Nat. t. 26. f. 9.
Ray (Crabro vulgaris and congener), *Ins.* 249 & 250.
Geoff. Ins. ii. 360. 1.
Réaum. Mém. Ins. vi. 215. t. 48. f. 1. 4–10. & iv. t. 10. f. 9.
Le Guêpe frelon, *Cloquet, Faune des Médecins,* v. 304. 1. t. 3. f. 5.
Hab. Europe.

10. VESPA ORIENTALIS. B.M.

Vespa orientalis, *Linn. Syst. Nat. Mant.* 540.
Fabr. Syst. Ent. 363. 3; *Spec. Ins.* i. 458. 3; *Mant. Ins.* i. 287. 4; *Ent. Syst.* ii. 254. 4; *Syst. Piez.* 254. 4.
Gmelin, Ed. Linn. i. 2748. 31.
Oliv. Encycl. Méth. vi. 677. 41.
Christ. Hym. 237.
St. Farg. Hym. i. 507. 5.
Ménétr. Mém. de l'Acad. Imp. des Sc. de St. Péters. vi. 304. 976 (1849).
Sauss. Mon. Guêpes Soc. 132. 11.
Vespa turcica, *Drury, Illustr. Exot. Ins.* ii. t. 39. f. 1.
Vespa fusca, *Christ. Hym.* 216.
Vespa ægyptiaca, *Vallot, Tabl. de Réaum.* 170.
Vespa nilotica, *Vallot, Tabl. de Réaum.* 170.
Savigny, Descr. de l'Egypt. Hym. pl. 8. f. 1.
Hab. South of Europe; Greece (Albania); Turkey; Egypt; India (Punjaub).

11. VESPA JURINEI. B.M.

Vespa Jurinei, *Sauss. Mon. Guêpes Soc.* 133. 12.

Hab. Albania.

DIV. II.—*Species of Asia, India, China, Java, Philippine Islands.*

12. VESPA CINCTA. B.M.

Vespa cincta, *Fabr. Syst. Ent.* 362. 1; *Spec. Ins.* i. 458. 1; *Mant. Ins.* i. 287. 6; *Ent. Syst.* ii. 254. 6; *Syst. Piez.* 254. 6.
Gmelin, Edit. Linn. i. 2748. 23.
Oliv. Encycl. Méth. Ins. vi. 676. 37.
Christ. Hym. 219.
St. Farg. Hym. 505. 1.
Sauss. Mon. Guêpes Soc. 152. 37.
Sphex tropica, *Sulz. Hist. Ins.* t. 27. f. 5.
Vespa unifasciata, *Oliv. Encycl. Méth.* vi. 677. 39.
Vespa tenebrionis, *Christ. Hym.* 216.

Hab. India; China; Java; Sumatra.

13. VESPA AFFINIS. B.M.

Vespa affinis, *Fabr. Mant. Ins.* i. 287. 2; *Ent. Syst.* ii. 253. 2; *Syst. Piez.* 254. 2.
Gmelin, Edit. Linn. i. 2748. 29.
Oliv. Encycl. Méth. vi. 677. 38.
St. Farg. Hym. i. 506. 2.
Sauss. Mon. Guêpes Soc. 154. 39.

Hab. India; China.

14. VESPA ANALIS. B.M.

Vespa analis, *Fabr. Syst. Ent.* 365. 5; *Spec. Ins.* i. 459. 5; *Mant. Ins.* i. 287. 6; *Ent. Syst.* ii. 254. 6; *Syst. Piez.* 254. 6.
Gmelin, Edit. Linn. i. 2749. 33.
Christ. Hym. 218.
Oliv. Encycl. Méth. vi. 677. 43.
St. Farg. Hym. i. 508. 6.
Sauss. Mon. Guêpes Soc. 152. 36.
Crabro sphinx, *Christ. Hym.* 217. t. 18. f. 5.

Hab. India.

15. VESPA BICOLOR. B.M.

Vespa bicolor, *Fabr. Mant. Ins.* i. 288. 14; *Ent. Syst.* ii. 258. 17; *Syst. Piez.* 257. 15.

Vespa bicolor, *Gmelin, Edit. Linn.* i. 2750. 40.
Oliv. Encycl. Méth. vi. 680. 53.
St. Farg. Hym. i. 512. 10.
Sauss. Mon. Guêpes Soc. 143. 25.

Hab. India; China.

16. VESPA VELUTINA. B.M.

Vespa velutina, *St. Farg. Hym.* i. 507. 4.
Sauss. Mon. Guêpes Soc. 144. 26.

Hab. India; Java; China.

17. VESPA AURARIA. B.M.

Vespa auraria, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 46. t. 8. f. 8.
Sauss. Mon. Guêpes Soc. 147. 29.

Hab. Northern India.

18. VESPA OBLITERATA. B.M.

Vespa obliterata, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 47.
Sauss. Mon. Guêpes Soc. 149. 32.

Hab. Northern India.

This species will in all probability prove to be the worker of *Vespa basalis*.

19. VESPA BASALIS. B.M.

Vespa basalis, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 46.
Sauss. Mon. Guêpes Soc. 148. 31.

Hab. India (Nepaul).

20. VESPA MAGNIFICA. B.M.

Vespa magnifica, *Smith, Trans. Ent. Soc. Lond.* new ser. i. 45.
Sauss. Mon. Guêpes Soc. 155. 40. t. 13. f. 3 ♀.

Hab. India (Nepaul, Landoor).

21. VESPA TYRANNICA. B.M.

Worker or female. Length 9¼ lines.—Black: the head and thorax with a thin black pubescence; covered with fine changeable velvety pile; the clypeus emarginate in front, the angles of the emargination rounded; the mandibles, cheeks, clypeus, a trifid spot above and the inner orbit of the eyes, orange; tips of the mandibles and inner margin, black; the antennæ fulvous

beneath. The outer margin of the wing-scales testaceous; the wings yellowish, hyaline, and with a dark stain on the anterior margin of the superior pair towards their base; the nervures pale ferruginous, the costal nervure black; all the segments of the abdomen, except the basal one, broadly margined with yellow.

Hab. Singapore. (Coll. A. Wallace, Esq.)

This species somewhat resembles the *Vespa velutina*, from which it is distinguished by having a larger head, which is wider than the thorax; the basal segment of the abdomen is proportionably much longer, with its basal margin regularly rounded; and the antennæ are also shorter.

22. VESPA DORYLLOIDES. B.M.

Vespa anomala, *Sauss. Mon. Guêpes Soc.* 112. 1. t. 14. f. 2.
Vespa dorylloides, *Sauss. Mon. Guêpes Soc. Supp.* 256.

Hab. Java; Tenasserim; East India; Sumatra.

23. VESPA ALDUINI.

Vespa Alduini, *Guérin, Voy. de la Coquille, Ins.* t. 9. f. 6.
Sauss. Mon. Guêpes Soc. 154. 38.
Vespa bimaculata, *Guérin, Voy. de la Coquille,* 264.

Hab. Java.

Probably a small variety of *V. cincta* (Saussure).

24. VESPA BELLICOSA. B.M.

Vespa bellicosa, *Sauss. Mon. Guêpes Soc.* 146. 28. t. 14. f. 10.

Hab. Java.

25. VESPA CRABRONIFORMIS. B.M.

Vespa crabroniformis, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. p. 40.
Sauss. Mon. Guêpes Soc. 145. 27.

Hab. North China.

26. VESPA MANDARINIA. B.M.

Vespa mandarinia, *Smith, Trans. Ent. Soc. Lond.* new ser. t. 8. f. 1.
Sauss. Mon. Guêpes Soc. 150. 34.

Hab. China (Shanghai). (Coll. R. Fortune, Esq.)

27. VESPA DUCALIS. B.M.

Vespa ducalis, *Smith, Trans. Ent. Soc. Lond.* new ser. ii. 39.
Sauss. Mon. Guêpes Soc. 151. 35.

Hab. North China (Teing-Teing, near Ning-Po-Foo); Northern India.

28. VESPA NIGRIPENNIS. B.M.

Vespa nigripennis, *Sauss. Mon. Guêpes Soc.* 156. 41.

Hab. Philippine Islands.

29. VESPA DEUSTA.

Vespa deusta, *St. Farg. Hym.* i. 506. 3.
Sauss. Mon. Guêpes Soc. 149. 33.

Hab. Philippine Islands.

30. VESPA LUCTUOSA. B.M.

Vespa luctuosa, *Sauss. Mon. Guêpes Soc.* 143. 24.

Hab. Philippine Islands.

31. VESPA PHILIPPINENSIS. B.M.

Vespa Philippinensis, *Sauss. Mon. Guêpes Soc.* 148. 30.

Hab. Philippine Islands.

DIV. III.—*Species of North America; Mexico.*

32. VESPA MACULATA. B.M.

Vespa maculata, *Linn. Syst. Nat.* i. 948. 2; *Amœn. Acad.* vi. 412. 91.
Muell. Ed. Linn. Ins. ii. 880. 2.
Gmelin, Ed. Linn. i. 2749. 2.
Fabr. Syst. Ent. 364. 11; *Spec. Ins.* i. 460. 13; *Mant. Ins.* i. 288. 15; *Ent. Syst.* ii. 258. 18; *Syst. Piez.* 257. 17.
De Geer, Ins. iii. 584. 9. t. 29. f. 13.
Christ. Hym. 217.
Oliv. Encycl. Méth. vi. 681. 54.
Illig. Cent. Ins. Car. 29. 91.
Kirby, Faun. Boreal. Amer. 266.
St. Farg. Hym. i. 512. 9.
Sauss. Mon. Guêpes Soc. i. 141. 22.
Vespa maculata Americana, *Christ. Hym.* 239.

Hab. North America.

33. VESPA CAROLINA. B.M.

Vespa Carolina, *Drury, Exot. Ins.* t. 44. f. 4.
Gmelin, Ed. Linn. i. 2749. 1.
Fabr. Syst. Ent. 363. 6; *Spec. Ins.* i. 459. 6; *Mant. Ins.* i. 278. 7; *Ent. Syst.* ii. 255. 9; *Syst. Piez.* 225. 7.
Muell. Ed. Linn. ii. 879. 1.
Christ. Hym. 217.
Oliv. Encycl. Méth. vi. 678. 44.
St. Farg. Hym. i. 513.
Sauss. Mon. Guêpes Soc. 142. 23.

Hab. North America.

34. VESPA ARENARIA.

Vespa arenaria, *Fabr. Syst. Ent.* 365. 12; *Spec. Ins.* i. 461. 14; *Mant. Ins.* i. 288. 16; *Ent. Syst.* ii. 258. 19; *Syst. Piez.* 258. 20.
Oliv. Encycl. Méth. vi. 681. 55.
Gmelin, Ed. Linn. p. 2749. 34.
Vespa marginata, *Kirby, Faun. Boreal. Amer.* 256. t. 6. f. 2.

Hab. North America.

35. VESPA DIABOLICA.

Vespa diabolica, *Sauss. Mon. Guêpes Soc.* 138. 18.

Hab. North America.

36. VESPA INFERNALIS

Vespa infernalis, *Sauss. Mon. Guêpes Soc.* 139. 19.

Hab. North America.

37. VESPA BOREALIS.

Vespa borealis, *Kirby, Faun. Boreal. Amer.* 264.

Hab. North America.

38. VESPA CONSOBRINA.

Vespa consobrina, *Sauss. Mon. Guêpes Soc.* 141. 21.

Hab. Newfoundland.

39. VESPA SULPHUREA. B.M.

Vespa sulphurea, *Sauss. Mon. Guêpes Soc.* 137. 17.

Hab. California.

40. VESPA VIDUA.

Vespa vidua, *Sauss. Mon. Guêpes Soc.* 136. 16.

Hab. Carolina.

41. VESPA CUNEATA. B.M.

Vespa cuneata, *Fabr. Syst. Piez.* 258. 21.
St. Farg. Hym. i. 513. 12.

Hab. Mexico.

Genus 9. SYNŒCA.

Vespa, pt., *Linn. Syst. Nat.* i. 952 (1766).
Polistes, pt., *Fabr. Syst. Piez.* 279 (1804).
Epipona, pt., *Halid. Trans. Linn. Soc. Lond.* xvii. (1837).
Synœca, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 552 (1852).

1. SYNŒCA SURINAMA. B.M.

Vespa Surinama, *Linn. Syst. Nat.* i. 952. 23.
Oliv. Encycl. Méth. vi. 676.
Christ. Hym. 215.
Vespa nigricornis, *Oliv. Encycl. Méth.* vi. 615.
Polistes cærulea, *Fabr. Syst. Piez.* 279. 46.
Synœca cærulea, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 552.

Hab. Cayenne.

2. SYNŒCA CYANEA. B.M.

Vespa cyanea, *Fabr. Syst. Ent.* 372. 45; *Spec. Ins.* i. 469. 64; *Mant. Ins.* i. 293. 78; *Ent. Syst.* ii. 282. 99.
Oliv. Encycl. Méth. vi. 674.
Polistes cyanea, *Fabr. Syst. Piez.* 279. 47.
Epipona cyanea, *Halid. Trans. Linn. Soc. Lond.* xvii. 322. 27.
Synœca cyanea, *Sauss. Mon. Guêpes Soc.* 159. 2.

Hab. Cayenne.

3. SYNŒCA AZUREA. B.M.

Synœca azurea, *Sauss. Ann. Soc. Ent. Fr.* 2nd ser. x. 554. 3; *Mon. Guêpes Soc.* 160. 3.

Hab. Brazil; Bahia; Mexico.

4. SYNŒCA ULTRAMARINA. B.M.

Synœca ultramarina, *Sauss. Mon. Guêpes Soc.* 160. 4.

Hab. Brazil (St. Catharine).

5. SYNŒCA VIOLACEA.

Synœca violacea, *Sauss. Mon. Guêpes Soc.* 161. 5.

Hab. Brazil (St. Catharine).

6. Synœca chalybea.

Synœca chalybea, *Sauss. Mon. Guêpes Soc.* 161. 6.

Hab. Cayenne.

7. Synœca testacea. B.M.

Synœca testacea, *Sauss. Mon. Guêpes Soc.* 162. 7.

Hab. Brazil (Para).

Genus 10. POLYBIA.

Vespa, pt., *Oliv. Encycl. Méth.* vi. 675 (1791).
Polistes, pt., *Fabr. Syst. Piez.* 269 (1804).
Rhopalidia, pt., *St. Farg. Hym.* i. 539 (1836).
Myrapetra, *White, Ann. & Mag. Nat. Hist.* vii. 320 (1841).
Polybia, *Sauss. Mon. Guêpes Soc.* 163 (1853).

1. Polybia apicipennis.

Polistes apicipennis, *Spin. Voy. Ent. Ghil.* 59. 55.
Polybia apicipennis, *Sauss. Mon. Guêpes Soc.* 166. 1. t. 18. f. 6.

Hab. Para.

2. Polybia Picteti.

Polybia Picteti, *Sauss. Mon. Guêpes Soc.* 168. 2. t. 21. f. 2.

Hab. Columbia.

3. Polybia sedula. B.M.

Polybia sedula, *Sauss. Mon. Guêpes Soc.* 169. 3. t. 21. f. 3. & f. 6 (the nest).

Hab. Bahia.

4. Polybia minutissima.

Polybia minutissima, *Sauss. Mon. Guêpes Soc.* 170. 4.

Hab. South America.

5. Polybia laboriosa.

Polybia laboriosa, *Sauss. Mon. Guêpes Soc.* 171. 5.

Hab. Mexico.

6. Polybia Sylveiræ. B.M.

Polybia Sylveiræ, *Sauss. Mon. Guêpes Soc.* 171. 6. t. 22. f. 2.

Hab. Brazil (Sylveira).

7. POLYBIA BIFASCIATA.

Polybia bifasciata, *Sauss. Mon. Guêpes Soc.* 172. 7. t. 22. f. 3.
Hab. Brazil.

8. POLYBIA QUADRICINCTA. B.M.

Polybia quadricincta, *Sauss. Mon. Guêpes Soc.* 173. 8.
Hab. South America.

9. POLYBIA EXIGUA.

Polybia exigua, *Sauss. Mon. Guêpes Soc.* 173. 9. t. 22. f. 1.
Hab. Brazil.

10. POLYBIA LILIACEA. B.M.

Polistes liliacea, *Fabr. Syst. Piez.* 271. 10.
Polybia liliacea, *St. Farg. Hym.* i. 533. 1.
Sauss. Mon. Guêpes Soc. 174. 10. t. 22. f. 7.
Hab. Cayenne.

11. POLYBIA SULCATA.

Polybia sulcata, *Sauss. Mon. Guêpes Soc.* 175. 11. t. 22. f. 4.
Hab. Brazil.

12. POLYBIA JURINEI. B.M.

Polybia Jurinei, *Sauss. Mon. Guêpes Soc.* 176. 12. t. 22. f. 5.
Hab. Brazil.

13. POLYBIA DIMIDIATA. B.M.

Vespa dimidiata, *Oliv. Encycl. Méth.* vi. 675. 28.
Polybia dimidiata, *Sauss. Mon. Guêpes Soc.* 177. 13.
Hab. Cayenne.

14. POLYBIA SOCIALIS.

Polybia socialis, *Sauss. Mon. Guêpes Soc.* 177. 14. t. 24. f. 1.
Hab. Brazil.

15. POLYBIA AURICHALCEA. B.M.

Polybia aurichalcea, *Sauss. Mon. Guêpes Soc.* 178. 15.
Hab. Brazil.

16. POLYBIA CHRYSOTHORAX.

Vespa chrysothorax, *Weber, Obs. Ent.* 103. 9.
Polistes aurulenta, *Fabr. Syst. Piez.* 275. 31.
Polybia chrysothorax, *Sauss. Mon. Guêpes Soc.* 178. 16. t. 24. f. 3.

Hab. Cayenne; Brazil.

17. POLYBIA SERICEA. B.M.

Vespa sericea, *Sauss. Oliv. Encycl. Méth. Ins.* 675. 29.
Rhopalidia rufithorax, *St. Farg. Hym.* i. 539. 1.
Polybia sericea, *Sauss. Mon. Guêpes Soc.* 179. 17. t. 24. f. 4.

Hab. Brazil (Para); Cayenne.

18. POLYBIA LUGUBRIS. B.M.!

Polybia lugubris, *Sauss. Mon. Guêpes Soc.* 180. 18. t. 24. f. 2.

Hab. Guiana.

19. POLYBIA REJECTA. B.M.

Polybia rejecta, *Sauss. Mon. Guêpes Soc.* 180. 19. t. 22. f. 5.

Hab. Cayenne.

20. POLYBIA ATRA. B.M.

Vespa atra, *Oliv. Encycl. Méth. Ins.* vi. 674. 20.
Polistes ignobilis, *Halid. Trans. Linn. Soc.* xvii. no. 28. t. 24. f. 5.
Polybia atra, *Sauss. Mon. Guêpes Soc.* 181. 20. t. 24. f. 5.

Hab. Brazil.

21. POLYBIA FASCIATA. B.M.

Polistes fasciata, *St. Farg. Hym.* i. 534. 2 (not the synonym).
Polybia fasciata, *Sauss. Mon. Guêpes Soc.* 182. 21. t. 24. f. 6.

Hab. Panama.

22. POLYBIA FLAVICANS. B.M.

Polistes flavicans, *Fabr. Syst. Piez.* 276. 33.
Polistes testacea, *Fabr. Syst. Piez.* 276. 34.
Polybia testacea, *Sauss. Mon. Guêpes Soc.* 183. 22. t. 23. f. 1.

Hab. South America.

23. POLYBIA ANGULICOLLIS. B.M.

Polybia angulicollis, *Spin. Voy. Ent. Ghil.* 61.
Sauss. Mon. Guêpes Soc. 184. 23. 54. t. 23. f. 3.

Hab. Para.

24. POLYBIA ANGULATA. B.M.

Polistes angulata, *Fabr. Syst. Piez.* 185. 24.
Polybia angulata, *Sauss. Mon. Guêpes Soc.* 185. 24.

Hab. Brazil.

25. POLYBIA PARAENSIS. B.M.

Polistes Paraensis, *Spin. Voy. Ent. Ghil.* no. 57.
Polybia Paraensis, *Sauss. Mon. Guêpes Soc.* 185. 25. t. 23. f. 2.

Hab. Para.

26. POLYBIA PHTHISICA.

Vespa phthisica, *Fabr. Ent. Syst.* ii. 281. 97.
Vespa Cajennensis, *Fabr. Ent. Syst. Supp.* 265. 103.
Coqueb. Illustr. Icon. Ins. 62. t. 15. f. 3.
Vespa ochrosticta, *Weber, Obs. Entom.* 104. 10.
Vespa fasciata, *Oliv. Encycl. Méth.* vi. 676. 35.
Polistes Cajennensis, *Fabr. Syst. Piez.* 280. 54.
Polistes hectica, *Fabr. Syst. Piez.* 278. 43.
Polistes fasciata, *Oliv. Encycl. Méth.* x. 172. 4.
Polistes fulvo-fasciata, *Latr. Gen. des Crust. et Ins.* iv. 142.
Polybia phthisica, *Sauss. Mon. Guêpes Soc.* 186. 26. t. 23. f. 7, 8.
Réaum. Mém. Ins. vi. 207. t. 14. f. 8.
De Geer, Ins. iii. 581. t. 29. f. 8.

Hab. Cayenne; Brazil; St. Thomas.

27. POLYBIA MULTIPICTA.

Polistes multipictus, *Halid. Trans. Linn. Soc. Lond.* xvii. 322. 29.
Polybia multipicta, *Sauss. Mon. Guêpes Soc.* 188. 27.

Hab. Brazil (St. Paul).

28. POLYBIA PALLIPES.

Vespa pallipes, *Oliv. Encycl. Méth.* vi. 675. 30.
Rhopalidia pallens, *St. Farg. Hym.* i. 539. 2.
Polybia pallipes, *Sauss. Mon. Guêpes Soc.* 189. 28. t. 25. f. 2.

Hab. Brazil; Cayenne.

29. POLYBIA VICINA.

Polybia vicina, *Sauss. Mon. Guêpes Soc.* 189. 29. t. 24. f. 7.

Hab. Brazil.

30. POLYBIA ANCEPS. B.M.

Polybia anceps, *Sauss. Mon. Guêpes Soc.* 190. 30.
Hab. Brazil.

31. POLYBIA XANTHOPUS.

Polybia xanthopus, *Sauss. Mon. Guêpes Soc.* 190. 31.
Hab. Mexico.

32. POLYBIA CONSTRUCTOR.

Polybia constructor, *Sauss. Mon. Guêpes Soc.* 191. 32. t. 23. f. 6.
Hab. South America.

33. POLYBIA SCUTELLARIS. B.M.

Myrapetra scutellaris, *White, Ann. & Mag. Nat. Hist.* vii. 315. t. 4. f. 4–7.
Polybia scutellaris, *Sauss. Mon. Guêpes Soc.* 192. 33. t. 23. f. 4.
Hab. Brazil.

34. POLYBIA PYGMÆA. B.M.

Vespa pygmæa, *Fabr. Ent. Syst.* ii. 283. 102.
Polistes pygmæa, *Fabr. Syst. Piez.* 280. 53.
Polybia pygmea, *Sauss. Mon. Guêpes Soc.* 193. 34. t. 23. f. 5.
Hab. Cayenne.

35. POLYBIA OCCIDENTALIS. B.M.

Vespa occidentalis, *Oliv. Encycl. Méth.* vi. 675. 31.
Myraptera elegans, *Curtis, Trans. Linn. Soc. Lond.* xix. 257. t. 31. f. 8, & 9 (the nest).
Polybia occidentalis, *Sauss. Mon. Guêpes Soc.* 194. 35.
Hab. Brazil.

36. POLYBIA PALLIDI-PECTUS. B.M.

Male. Length 5¼ lines.—Black: the clypeus, face as high as the insertion of the antennæ, the scape in front, the mandibles and outer orbit of the eyes, sulphur-yellow; the flagellum beneath orange. Thorax: a narrow line on the anterior margin of the prothorax, another on its posterior margin, a similar narrow line at the base of the scutellum and post-scutellum, and also two lines running from the scutellum to the base of the posterior wings, yellow; two oblique lines at the base of the

metathorax, the pectus, the coxæ and femora in front, yellow; the tibiæ and tarsi ferruginous and more or less fuscous above; the wings hyaline, the anterior margins of the superior pair yellowish, with a fuscous cloud in the marginal cell, the nervures ferruginous. Abdomen: the petiole elongate, with its apical margin as well as that of the following segment with a yellow fascia; beneath, the abdomen is more or less ferruginous in the middle, the apical margin of all the segments yellow.

Hab. Mexico.

This is probably the male of *Polybia pediculata*.

37. POLYBIA INFERNALIS.

Polybia infernalis, *Sauss. Mon. Guêpes Soc.* 195. 36. t. 25. f. 3.

Hab. Para.

38. POLYBIA ŒCODOMA.

Polybia œcodoma, *Sauss. Mon. Guêpes Soc.*, 195. 37. t. 25. f. 7.

Hab. Brazil (Bahia).

39. POLYBIA FASTIDIOSUSCULA. B.M.

Polybia fastidiosuscula, *Sauss. Mon. Guêpes Soc.* 197. 39. t. 25. f. 4.

Hab. Brazil.

40. POLYBIA CARBONARIA.

Polybia carbonaria, *Sauss. Mon. Guêpes Soc.* 198. 40. t. 26. f. 5.

Hab. Brazil.

41. POLYBIA CORDATA. B.M.

Female. Length 4½ lines.—Black: the clypeus smooth and shining, its anterior margin forming an obtuse angle. The posterior margin of the prothorax, a connected oblique stripe beneath the wings, the posterior margin of the tegulæ, a minute spot at the lateral angles of the scutellum and the post-scutellum, yellow; the wings hyaline and iridescent, with a dark fuscous spot occupying the marginal cell and the apex of the externo-medial cell; the nervures dark towards the base of the wings and pale towards their apex. Abdomen heart-shaped; the first segment with a narrow yellow fascia on its apical margin, the following segments with a broad fascia; the fasciæ slightly notched in the middle and emarginate on each side; the fascia on the second

segment recurved at the sides and united to a large lateral spot at the base; all the fasciæ except that on the basal segment continued beneath.

Hab. Brazil (Amazons). (Coll. H. W. Bates.)

42. POLYBIA METATHORACICA. B.M.

Polybia metathoracica, *Sauss. Mon. Guêpes Soc.* 198. 41. t. 25. f. 1.

Hab. Cayenne.

43. POLYBIA FLAVITARSIS. B.M.

Polybia flavitarsis, *Sauss. Mon. Guêpes Soc.* 199. 42.

Hab. California.

44. POLYBIA INJUCUNDA.

Polybia injucunda, *Sauss. Mon. Guêpes Soc.* 200. 43. t. 25. f. 8.

Hab. Para.

45. POLYBIA INDETERMINABILIS.

Polybia indeterminabilis, *Sauss. Mon. Guêpes Soc.* 201. 45.

Hab. South America.

46. POLYBIA SURINAMENSIS.

Polybia Surinamensis, *Sauss. Mon. Guêpes Soc.* 200. 44.

Hab. Surinam; Brazil.

47. POLYBIA PARVULA.

Polistes parvula, *Fabr. Syst. Piez.* 280. 55.
Polybia parvula, *Sauss. Mon. Guêpes Soc.* 196. 38.

Hab. Mexico.

48. POLYBIA CUBENSIS. B.M.

Polybia Cubensis, *Sauss. Mon. Guêpes Soc.* 202. 46. t. 25. f. 5, 6.

Hab. Cuba.

49. POLYBIA MEXICANA.

Polybia Mexicana, *Sauss. Mon. Guêpes Soc.* 203. 47. t. 26. f. 6.

Hab. Mexico.

50. POLYBIA RUFIDENS.

Polybia rufidens, *Sauss. Mon. Guêpes Soc.* 204. 48.
Hab. Cayenne.

51. POLYBIA RUFIGASTRA.

Polybia rufigastra, *Sauss. Mon. Guêpes Soc.* 204. 49.
Hab. America.

52. POLYBIA PEDICULATA.

Polybia pediculata, *Sauss. Mon. Guêpes Soc.* 205. 50. t. 26. f. 7.
Hab. Brazil.

53. POLYBIA FILIFORMIS.

Polybia filiformis, *Sauss. Mon. Guêpes Soc.* 206. 51. t. 26. f. 8.
Hab. Brazil.

54. POLYBIA ALBO-PICTA.

Female. Length 9 mill.—Black: the clypeus angular in front and of a yellowish white, a spot above the clypeus and a broad stripe at the inner orbit of the eyes of the same colour; a white line behind the eyes. The posterior border of the prothorax, the tegulæ, a line beneath the wings, the scutellum and post-scutellum with a minute spot on each side of both, and a large spot on each side of the metathorax, white; the wings fusco-hyaline, the superior pair with a fuscous stain along their anterior margin, which entirely occupies the marginal cell; the apical joints of the tarsi fusco-ferruginous. Abdomen: the apical margin of the basal petiolated segment with a broad white fascia; the apical margins of the second and three following segments with a white border, the inner margin of which is more or less irregular.

Hab. Brazil. (Coll. W. Swainson, Esq.)

55. POLYBIA BICOLOR. B.M.

Female. Length 10 mill.—Head and thorax black; abdomen of a reddish brown; the clypeus produced into an obtuse point anteriorly, with an impressed line at the apex; the tips of the mandibles ferruginous. Thorax elongate-ovate, smooth and slightly shining above; the posterior margin of the prothorax and the basal margin of the scutellum with a narrow yellow line;

the wings hyaline, with a ferruginous tinge on the anterior margin of the superior pair; a dark fuscous cloud occupying the marginal cell and extending to the apex of the wing; the nervures ferruginous, becoming fuscous towards the apex of the wings. Abdomen: the petiolated basal segment rather darker than the following segments, its apical margin with a narrow yellow border; the following segments have a narrow pale fascia on their apical margins, beneath, but on the upper surface the fasciæ are scarcely distinguishable.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

56. POLYBIA DILIGENS. B.M.

Female. Length 6 mill.—Black, decorated with yellowish-white markings: the clypeus, sides of the face, two united spots above the insertion of the antennæ, and a narrow line at the outer orbits of the eyes, yellow; the clypeus with a black stripe down the middle, not extending to the apical margin; the mandibles, scape, and flagellum beneath, fulvous. Thorax: a narrow line on the anterior and posterior margins of the prothorax, three oblique spots beneath the wings, the anterior and intermediate coxæ in front, the tegulæ, two longitudinal stripes on the mesothorax, the scutellum, post-scutellum, and a large spot on each side of the metathorax, yellowish-white; a fascia of the same colour on the apical margin of the petiolated segment of the abdomen, another on the apical and basal margin of the second segment, and a fascia on the apical margin of the third segment; the legs fusco-ferruginous, with the tarsi palest.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

57. POLYBIA FLAVIFRONS. B.M.

Female. Length 9 mill.—Black: the face and vertex orange-yellow, with a line at the outer orbit of the eyes and a spot on the mandibles at their base of the same colour; the scape in front and the flagellum beneath, fulvous; a large cordate black spot on the vertex enclosing the stemmata. Thorax: a narrow line on the posterior margin of the prothorax, an oblique spot beneath the wings, the tegulæ and a narrow epaulet passing over them to the scutellum, a transverse spot before the latter emitting two narrow lines which terminate before the anterior margin of the mesothorax, the scutellum, post-scutellum, and a spot on each side of the metathorax, yellow; the anterior coxæ yellow in front; the legs fusco-ferruginous, palest in front; the wings subhyaline, with a narrow fuscous cloud along the anterior margin of the superior pair. Abdomen: the apical margins of

the segments with broad yellow fasciæ, which are slightly notched in the middle and waved on each side, that on the second segment running upwards laterally; beneath, the segments have a narrower border.

Hab. Venezuela (Guayaquil).

58. POLYBIA INDICA. B.M.

Polybia Indica, *Sauss. Mon. Guêpes Soc.* 207. 52. t. 26. f. 3.

Hab. China.

59. POLYBIA ORIENTALIS. B.M.

Polybia orientalis, *Sauss. Mon. Guêpes Soc.* 208. 53. t. 26. f. 2.

Hab. China.

60. POLYBIA TABIDA.

Vespa tabida, *Fabr. Spec. Ins.* i. 468. 62; *Mant. Ins.* i. 293. 76; *Ent. Syst.* ii. 281. 96.
Oliv. Encycl. Méth. vi. 673. 18.
Polistes tabida, *Fabr. Syst. Piez.* 278. 40.
Polybia tabida, *Sauss. Mon. Guêpes Soc.* 209. 54. t. 26. f. 4.

Hab. Africa.

Genus 11. TATUA.

Vespa, pt., *Fabr. Ent. Syst. Supp.* 264 (1798).
Epipona, pt., *Latr. Gen. des Crust. et Ins.* iv. 141 (1804).
Polistes, pt., *St. Farg. & Serv. Encycl. Méth.* x. 172 (1825).
Tatua, *Sauss. Mon. Guêpes Soc.* 214 (1853).

1. TATUA MORIO. B.M.

Vespa morio, *Fabr. Ent. Syst. Supp.* 264. 98.
Epipona tatua, *Latr. Gen. des Crust. et Ins.* iv. 141. 1. t. 14. f. 5.
Cuv. Règ. Anim. v. 339.
St. Farg. Hym. i. 540. 1.
Polistes tatua, *St. Farg. & Serv. Encycl. Méth.* x. 172. 2.
Polistes morio, *Curtis, Trans. Linn. Soc. Lond.* xix. 258. 6.
Tatua morio, *Sauss. Mon. Guêpes Soc.* 214. 1. t. 31. f. 1.

Hab. Brazil.

2. TATUA GUERINI.

Tatua Guerini, *Sauss. Mon. Guêpes Soc.* 215. 2.

Hab. Mexico.

Genus 12. CHARTERGUS.

Vespa, pt., *Oliv. Encycl. Méth.* vi. (1791).
Epipona, pt., *Latr. Gen. des Crust. et Ins.* (1804).
Polistes, pt., *St. Farg. & Serv. Encycl. Méth.* x. 172 (1825).
Chartergus, *St. Farg. Hym.* i. 546 (1836).

1. CHARTERGUS APICALIS. B.M.

Vespa apicalis, *Fabr. Syst. Piez.* 260. 38.
Polistes, *Gray, Griff. Anim. Kingd.* xv. 575. t. 3. f. 3.
Chartergus ater, *St. Farg. Hym.* i. 546. 1.
Chartergus apicalis, *Sauss. Mon. Guêpes Soc.* 217. 1.

Hab. Bolivia; Brazil; Cayenne; Mexico.

2. CHARTERGUS FULGIDIPENNIS.

Chartergus fulgidipennis, *Sauss. Mon. Guêpes Sol.* 218. 2. t. 31. f. 5.

Hab. Para.

3. CHARTERGUS COLOBOPTERUS.

Vespa colobopterus, *Weber, Obs. Entom.* 102. 5.
Seba, Locupl. Rer. Thes. iv. t. 98.
Chartergus colobopterus, *Sauss. Mon. Guêpes Soc.* 248. 3.

Hab. Columbia.

4. CHARTERGUS SMITHII.

Chartergus Smithii, *Sauss. Mon. Guêpes Soc.* 219. 4.

Hab. Brazil. (Coll. F. Smith.)

5. CHARTERGUS CHARTARIUS.

Vespa chartaria, *Oliv. Encycl. Méth.* vi. 687.
Vespa artifex Surinamensis, *Christ. Hym.* 226. t. 20.
Vespa nidulans, *Fabr. Ent. Syst.* ii. 271. 66; *Syst. Piez.* p. 266. 68.
Coqueb. Illustr. Icon. t. 6. f. 3.
Vespa chartifex, *Vallot, Concord. Syst.* p. 171.
Epipona nidulans, *Latr. Gen. des Crust. et Ins.* i. t. 14. f. 6.
Cuv. Règn. Anim. v. 339.
Epipona chartaria, *Latr. Hist. Crust. et Ins.* xiii. 102. t. 14. f. 6, 7.
Polistes nidulans, *St. Farg. & Serv. Encycl. Méth.* x. 172. 5.
Guér. Icon. Règ. Anim. t. 72. f. 7.
Epipona chartaria, *Curtis, Trans. Linn. Soc. Lond.* xix. 258. 4.
Réaum. Ins. vi. t. 20. f. 1–4, t. 21. f. 1, t. 22. f. 23, t. 24?

Hab. South America (Brazil, Cayenne, British Guiana); Mexico.

6. CHARTERGUS GLOBIVENTRIS.

Chartergus globiventris, *Sauss. Mon. Guêpes Soc.* 221. 6. t. 31. f. 3.

Hab. Brazil.

7. CHARTERGUS ATER.

Chartergus ater, *Sauss. Mon. Guêpes Soc.* 222. 7.

Hab. Brazil.

8. CHARTERGUS ZONATUS.

Chartergus zonatus, *Spin. Mem. Accad. Torino*, n. s. xiii. 73. 54. *Sauss. Mon. Guêpes Soc.* 222. 8.

Hab. Brazil (Para).

9. CHARTERGUS COMPRESSUS.

Chartergus compressus, *Sauss. Mon. Guêpes Soc.* 223. 9. t. 31. f. 6

Hab. Brazil (the Amazons).

10. CHARTERGUS EMORTUALIS. B.M.

Chartergus emortualis, *Sauss. Guérin's Rev. et Mag. Zool.* (1855) p. 374.

Hab. Brazil (Santarem).

11. CHARTERGUS LUCTUOSUS. B.M.

Female. Length 5½ lines.—Black: the clypeus with a curved line at its anterior margin in the middle, a large spot on the mandibles, an ovate spot on the lower part of the cheeks, a short stripe behind the eyes, a line at their inner orbits above the clypeus, a stripe on the scape in front and two spots between the antennæ, yellow; the flagellum obscurely ferruginous towards its apex beneath. Thorax: the anterior coxæ and tibiæ in front, yellow; the wings hyaline, their nervures fuscous. Abdomen: the first segment with a narrow yellow fascia on its posterior margin.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

Genus 13. NECTARINA.

Polistes, pt., *Latr. Ann. Sci. Nat.* 1st ser. iv. (1825).
Brachygastra, *Perty, Del. An. Art.* 146 (1817–20).
Nectarina, *Shuck. Cab. Cycl. Hist. Ins.* 181 (1840).
Nectarinia, *Sauss. Mon. Guêpes Soc.* 225 (1853).

1. NECTARINA RUFIVENTRIS. B.M.

Nectarinia rufiventris, *Sauss. Mon. Guêpes Soc.* 226. 1.

Hab. Brazil (Para).

2. NECTARINA SCUTELLATA. B.M.

Brachygastra scutellata, *Spin. Mem. Accad. Torino,* new ser. xiii. no. 55. p. 74.

Nectarinia scutellata, *Sauss. Mon. Guêpes Soc.* 227. 2.

Hab. Brazil (Para).

3. NECTARINA BILINEOLATA.

Brachygastra bilineolata, *Spin. Ann. Soc. Ent. Fr.* x. p. 126 (1841).

Nectarinia bilineolata, *Sauss. Mon. Guêpes Soc.* 228. 3. t. 34. f. 2.

Hab. Cayenne.

4. NECTARINA SMITHII. B.M.

Nectarinia Smithii, *Sauss. Mon. Guêpes Soc.* 229. 4. t. 31. f. 8.

Hab. Brazil.

5. NECTARINA BINOTATA.

Nectarinia binotata, *Sauss. Mon. Guêpes Soc.* 230. 5.

Hab. Cayenne.

6. NECTARINA ANALIS. B.M.

Brachygastra analis, *Perty, Del. An. Art.* t. 28.

Nectarina analis, *Shuck. Cab. Cycl. Hist. Ins.* p. 183 (1840). *Guér. Icon. Règ. Anim. Ins.* 148. t. 28. f. 6.

Nectarinia analis, *Sauss. Mon. Guêpes Soc.* 230. 6.

Hab. Brazil.

7. NECTARINA VELUTINA.

Brachygastra velutina, *Spin. Ann. Soc. Ent. Fr.* x. 126. 77. t. 3. no. 5 ♀ (1841).

Nectarinia velutina, *Sauss. Mon. Guêpes Soc.* 231. 7.

Hab. Brazil; Cayenne.

8. NECTARINA LECHEGUANA.

Polistes lecheguana, *Latr. Ann. Sci. Nat.* 1st ser. iv. 335.

Nectarinia lecheguana, *Sauss. Mon. Guêpes Soc.* 232. 8. t. 34. f. 3.

Hab. Brazil.

9. NECTARINA MELLIFICA.

Polistes mellifica, *Say, Bost. Journ. Nat. Hist.* i. p. 390.
Nectarinia mellifica, *Sauss. Mon. Guêpes Soc.* 233. 9.
Hab. Brazil.

10. NECTARINA AUGUSTI.

Nectarinia Augusti, *Sauss. Mon. Guêpes Soc.* 233. 10.
Hab. Mexico.

11. NECTARINA AURULENTA.

Brachygastra aurulenta, *Ericks. Fauna und Flora Brit. Guiana,* iii. 590.
Hab. British Guiana.

EXPLANATION OF PLATES.

PLATE I.

Fig.
1. *Paragia pictifrons.*
2. *Stenoglossa Odyneroides.*
3. *Gayella Mutilloides.*
4. *Raphiglossa Natalensis.*
5. *Smithia Natalensis.*

PLATE II.

Fig.
1. *Zethus lobulatus.*
2. *Discoelius insignis.*
3. *Zethus (Calligaster) gigas.*
4. *Eumenes multipictus.*
5. *Pachymenes chrysothorax.*

PLATE III.

Fig.
1. *Rhynchium Grayi.*
2. *Monobia angulosa.*
3. *Montezumia Indica.*
4. *Pterochilus insignis.*
5. *Leptochilus denticulatus.*

PLATE IV.

Fig.
1. *Alastor flavipes.*
2. *Belonogaster Guineensis.*
3. *Mischocyttarus Smithii.*
4. *Ischnogaster micans.*

PLATE V.

Fig.
1. *Polybia flavitarsis.*
2. *Nectarina Smithii.*
3. *Synœca testacea.*
4. *Vespa mandarinia.*

PLATE VI.

Fig.
1. Nest of *Eumenes tinctor.* Constructed of mud and suspended in stems of grass.
2. Nest of *Synagris mirabilis.* Constructed of sandy loam.
3. Nest of *Synagris calida.* Constructed of sandy loam.
4. Nest of *Pelopœus chalybeus.* Constructed of the excrement of cows or horses.
5. Nest of *Mischocyttarus labiatus.* Constructed of the scrapings of wood.
6. Nest of *Icaria guttatipennis.* Constructed of the scrapings of wood.
7. Nest of a spécies of *Eumenes.* Constructed of mud and attached to a reed.

List of the typical specimens of *Vespidæ* in the Linnæan Collection, preserved in the Museum of the Linnæan Society referred to the genera in which they appear in this Catalogue.

Vespa coarctata.	Eumenes coarctata.
—— calida.	Synagris calida.
—— cornuta.	—— cornuta.
—— parietum.	Odynerus parietum.
—— muraria.	—— murarius.
—— spinipes.	—— spinipes.
—— bifasciata.	—— bifasciatus.
—— Carolina.	Polistes Carolina.
—— orientalis.	—— orientalis.
—— gallica.	—— gallicus.
—— biglumis.	—— biglumis.
—— maculata.	Vespa maculata.
—— cincta.	—— cincta.
—— affinis.	—— affinis.
—— Crabro.	—— Crabro.
—— vulgaris.	—— vulgaris.
—— rufa.	—— rufa.

List of the typical specimens of *Vespidæ* in the Banksian Collection, preserved in the Museum of the Linnæan Society of London, described by Fabricius in the *Systema Piezatorum*; referred to the genera in which they appear in this Catalogue.

Vespa cincta,	*Syst. Piez.*	p.	253. 1.	Vespa cincta.
—— ephippium,	,,	,,	254. 3.	Abispa ephippium.
—— analis,	,,	,,	254. 6.	Odynerus analis.
—— æstuans,	,,	,,	258. 24.	Synagris æstuans.
—— hæmorrhoidalis,	,,	,,	259. 28.	Rhynchium hæmorrhoidale.
—— albifrons,	,,	,,	259. 29.	Alastor albifrons.
—— tecta,	,,	,,	261. 40.	Odynerus tectus.
—— bicincta,	,,	,,	265. 64.	—— bicinctus.
—— rufipes,	,,	,,	259. 32.	Rhynchium rufipes.
Polistes lanio,	,,	,,	269. 1.	Polistes Canadensis.
—— Schach,	,,	,,	272. 2.	—— Schach.
—— humilis,	,,	,,	270. 5.	—— humilis.
—— tepidus,	,,	,,	271. 7.	—— tepidus.
—— Macaensis,	,,	,,	272. 12.	—— Macaensis.
—— carnifex,	,,	,,	272. 13.	—— carnifex.
—— marginalis,	,,	,,	272. 17.	—— marginalis.
—— variabilis,	,,	,,	273. 20.	—— variabilis.
—— lateralis,	,,	,,	273. 22.	Rhynchium laterale.
—— cinereus,				Raphigaster junceus.
—— macilentus,				—— rufipennis.
—— cyanea,				Synœca cyanea.
Eumenes grisea,				Raphigaster grisea.
—— campaniformis,				Eumenes campaniformis.
—— arcuata,				—— arcuata.
—— petiolata,				—— petiolata.

Tab 1.

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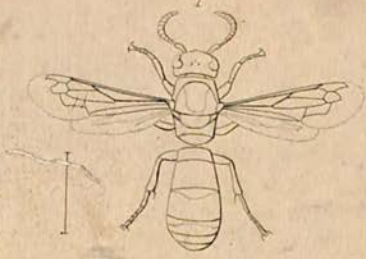

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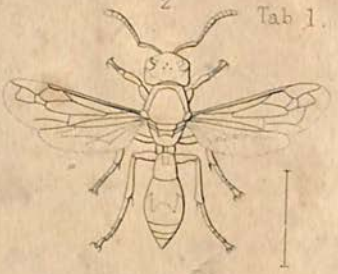

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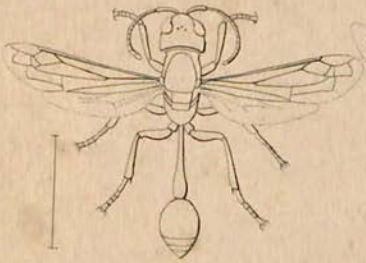

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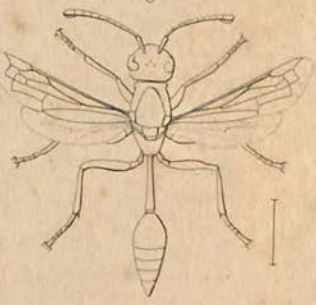

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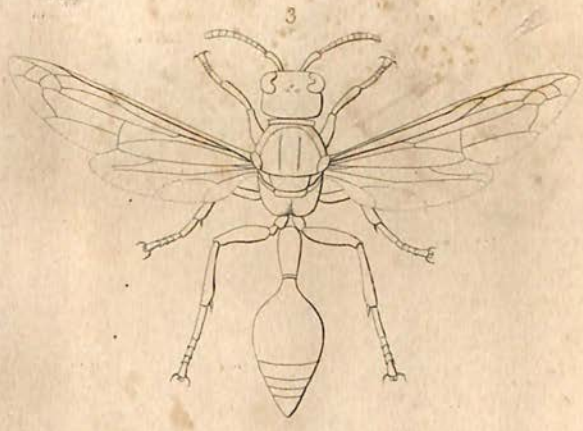
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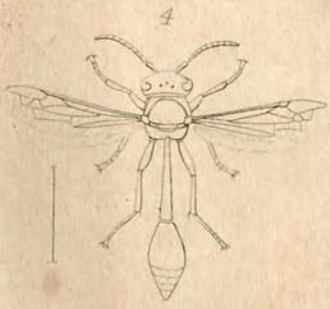
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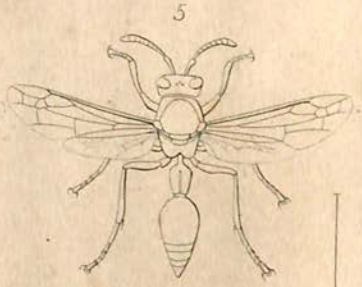
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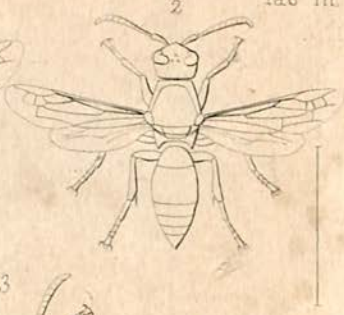
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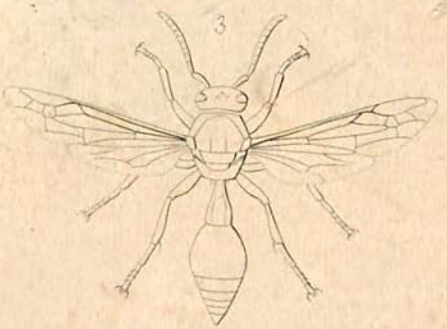
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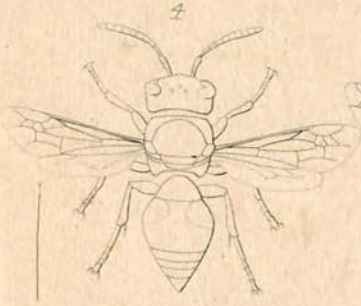
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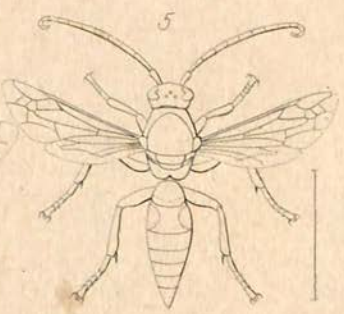
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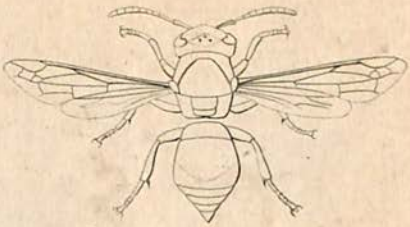
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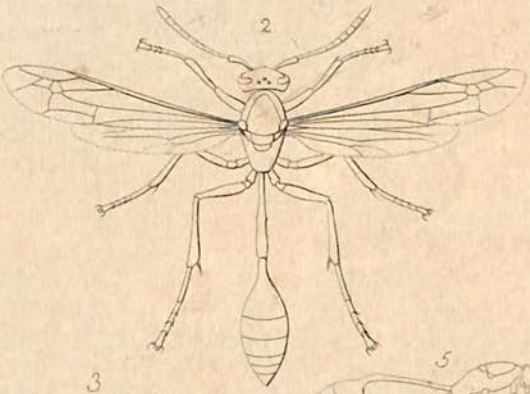
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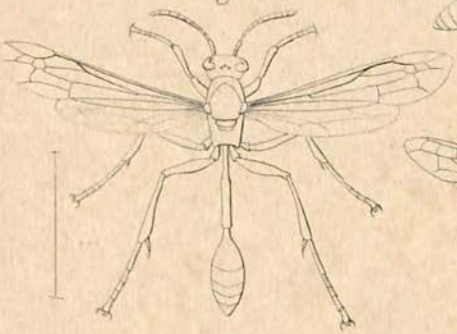
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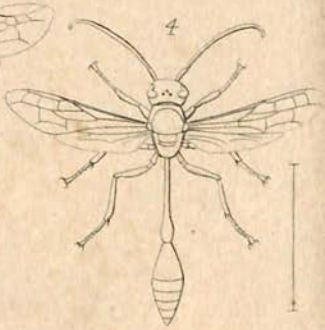
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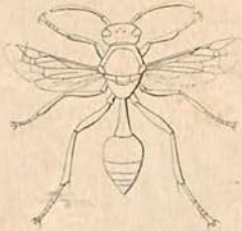

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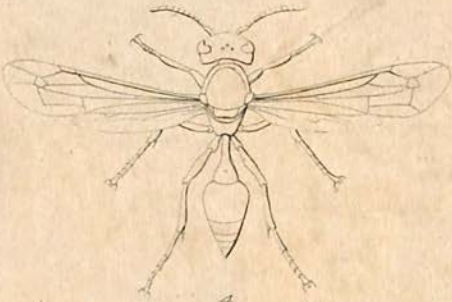

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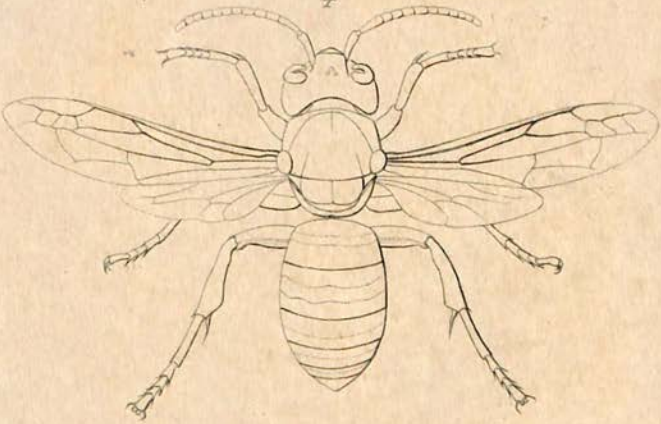

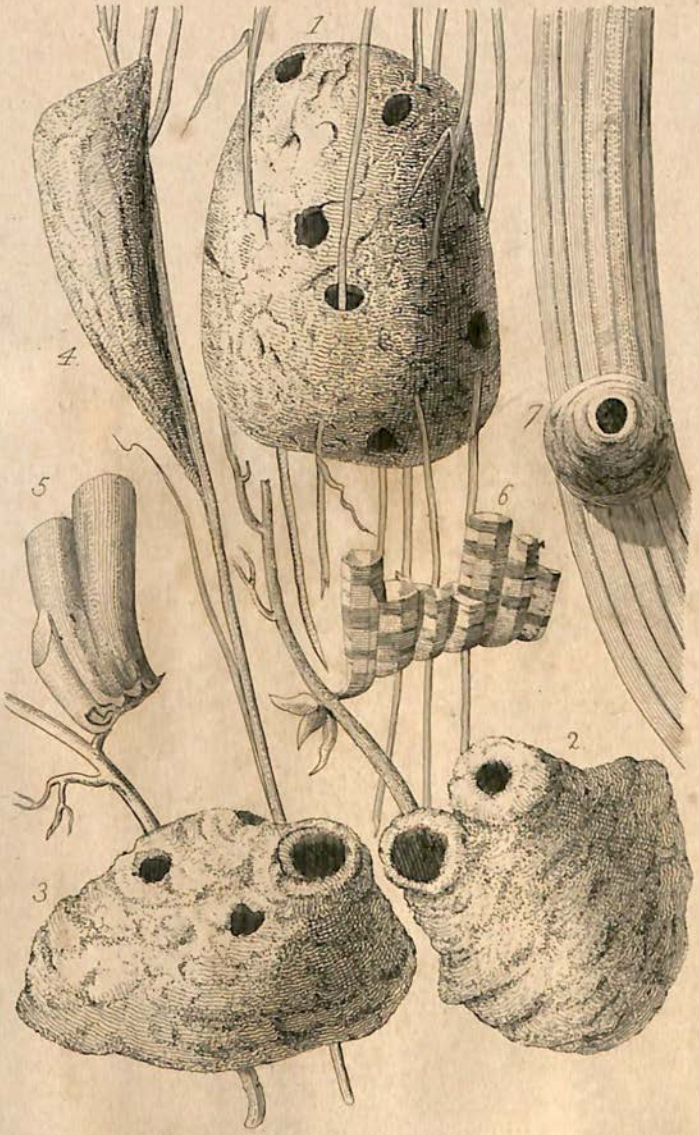
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CATALOGUE

OF

HYMENOPTEROUS INSECTS

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

BY

FREDERICK SMITH, V.P., ENT. SOC.

PART VI.

FORMICIDÆ.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.
1858.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

PREFACE.

THE object of the present Catalogue is to give a complete list of all the known genera and species of Ants (FORMICIDÆ), including those which have been previously recorded, together with descriptions of such as appear to be hitherto undescribed.

The letters B.M. in the margin indicate the species contained in the Collection of the British Museum.

JOHN EDWARD GRAY.

1st March, 1858.

CATALOGUE

OF

HYMENOPTERA.

Div. II. ACULEATA.

Tribe HETEROGYNA, *Latr.*

Family I. FORMICIDÆ, *Leach.*

Genus 1. FORMICA.

Formica, pt., *Linn. Faun. Suec.* 426 (1761); *Syst. Nat.* i. 962 (1766).
Lasius, pt., *Fabr. Syst. Piez.* 415 (1804).
Cataglyphis, *Foerst. Hym. Stud. Form.* 485 (1850).
Tapinoma, pt., *Schenck, Besch. Nass. Ameis.* 129 (1852).
Monocombus, *Mayr.* 110 (1855).

The maxillary palpi 6-jointed; the labial palpi 4-jointed. Ocelli 3, placed in a triangle on the vertex*. Males and females winged, constantly so in the former sex, temporarily so in the latter. The superior wings with one marginal and two submarginal cells; one division having also a complete discoidal cell, another in which it is obsolete; the petiole of the abdomen furnished with a single vertical scale. None of the individuals furnished with a sting. The pupæ enclosed in silken cocoons.

* In a few species these are obliterated, or scarcely discernible, as in the small workers of *F. flava* and *F. nigra*, &c.

Species of Europe. (Sp. 1–25.)

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal, and one discoidal cell. The scale of the peduncle vertical and compressed. Ocelli present in the males, females, and usually so in the workers.

A. *Males smaller than the females, but not remarkably so.*

Note.—In describing the workers of this genus we have used the terms Worker major and Worker minor; amongst the British species such positive distinctions are not so readily discernible as in many exotic ones; amongst these, the large workers are distinguished by an enormously developed head, wider than either the thorax or abdomen; the small workers in such species have the head of the ordinary size and form, not being wider than the abdomen; these have also usually more slender and elongate legs. In the majority of the British species two forms or sizes of workers are to be met with, but in the societies of *F. fuliginosa* little or no difference in size is to be detected. The *ocelli*, as a general rule, are to be found in all the sexes, but in *F. nigra*, *flava* and *umbrata* they are only to be seen under a high magnifying power.

1. FORMICA RUFA. Pl. III. figs. 1, 7, 8, 9. B.M.

Formica rufa, *Linn. Faun. Suec.* no. 1721; *Syst. Nat.* i. 962. 3.
Scop. Ins. Carn. 313. 836.
Fabr. Syst. Ent. 391. 4; *Ent. Syst.* ii. 351. 8; *Syst. Piez.* 398. 11.
Schrank, Ins. Austr. no. 834.
Rossi, Faun. Etrus. ii. 113. 836.
Don. Brit. Ins. xiv. 76. t. 496 ♀.
Oliv. Encycl. Méth. vi. 493. 14.
Latr. Hist. Nat. Fourm. 143. pl. 5. f. 28. A. B. ♂ ♀ ☿.
Dumér. Consid. gén. 211. t. 32. f. 2 ♀.
Jurine, Hym. 272.
St. Farg. Hym. i. 201. 3.
Curtis, Brit. Ent. xvi. t. 752 ♂. ♀ ☿.
Zett. Ins. Lapp. 449. 5.
Brullé, Expéd. Sc. de Morée, iii. 327. 727.
Nyl. Form. Fr. et d'Algér. 60. 14; *Adno. Mon. Form. Bor.* 902. 5.
Foerst. Hym. Stud. Form. 13. 3.
Schenck, Beschr. Nass. Ameis. 25.
Smith, Brit. Form. Trans. Ent. Soc. Lond. iii. n. s. 100. 1.
Mayr. Form. Austr. 56. 9; *Ungar. Ameis.* 9. 9.

Formica dorsata, *Panz. Faun. Germ.* 54. 1 ♀.
Formica obsoleta, *Zett. Ins. Lapp.* 449. 5 ♀ ☿.
Formica lugubris, *Zett. idem*, 6 ♂.
Formica polyctena, *Foerst. Hym. Stud. Form.* 15. 4.
Schenck, Beschr. Nass. Ameis. 28.
Formica truncicola, *Foerst. Hym. Stud. Form.* 21.
Formica piniphila, *Schenck, Beschr. Nass. Ameis.* 28.

Hab. Europe.

This species is popularly known as the Wood-ant, from the circumstance of its forming the heaped-up nests of leaves, sticks and similar materials, usually in woods, but colonies are frequently met with in other situations; indeed it sometimes takes possession of the decaying trunk of a tree, and has been observed in a wall built of turf; but woods are its common habitat. The nests of this species are the habitat of several Coleoptera, which probably resort to them as suitable situations in which to undergo their metamorphoses; of such, *Cetonia aurata* and *Clythra quadripunctata* are examples: besides these, there are also found in the nests a number of species belonging to the family Staphylinidæ, and as these are carried into the nests by the ants themselves, there can be little doubt, as they are not only suffered to live, but are carefully tended to and protected by the ants, that they are in some way conducive to the welfare of the communities, probably emitting, like the Aphidæ, secretions which are supplied by the working ants to their young brood. In the nest are also occasionally found colonies of the allied genus *Myrmica*; *M. nitidula* and *M. muscorum* are sometimes met with, and we have twice found a colony of *M. lævinodis* living in perfect harmony with the rightful owners in the very heart of the nest.

2. FORMICA CONGERENS. B.M.

Formica congerens, *Nyl. Adno. Mon. Form.* 906. 7; *Addit. Alter. Mon. Form.* 30; *Form. Fr. et d'Algér.* 61. 15.
Foerst. Hym. Stud. Form. 17. 5.
Schenck, Beschr. Nass. Ameis. 30.
Mayr. Form. Austr. 60; 10; *Ungar. Ameis.* 10. 10.

Hab. Britain; France; Germany; Hungary; Switzerland; Italy; Finland.

This species, which closely resembles the wood-ant, *F. rufa*, has been found in Scotland; it is readily distinguished by its being much more pubescent than *F. rufa*. It constructs similar nests to the wood-ant, and in its nests are found not only a species of *Myrmica*, but several interesting species of Staphy-

linidæ; and Dr. Nylander discovered in the nests of this species the *Tinea ochracella*, in Finland.

3. FORMICA TRUNCICOLA. B.M.

Formica truncicola, *Nyl. Adno. Mon. Form. Bor.* 907; *Form. Fr. et d'Algér.* 62.
Schenck, Beschr. Nass. Ameis. 33.
Mayr. Form. Austr. 62. 11; *Ungar. Ameis.* 10. 11.

Hab. Germany; Austria; Switzerland; Hungary; Italy; Lapland; Finland; Denmark.

4. FORMICA TRUNCORUM.

Formica truncorum, *Fabr. Syst. Piez.* 403. 31 ♀.
Formica truncicola, *Nylander* ♀?

Hab. Moravia.

5. FORMICA SANGUINEA. Pl. III. fig. 10. B.M.

Formica sanguinea, *Latr. Hist. Nat. Fourm.* 150. pl. 5. f. 29 ☿.
Jurine, Hym. 272.
St. Farg. Hym. i. 203. 4 ♂ ♀ ☿.
Foerst. Hym. Stud. Form. 20. 6.
Schenck, Beschr. Nass. Ameis. 36.
Smith, Brit. Form. 101. 2.
Mayr. Form. Austr. 64. 12; *Ungar. Ameis.* 10. 12.
Nyl. Form. Fr. et d'Algér. 62. 16.
Formica dominula, *Nyl. Adno. Mon. Form. Bor.* 905. 6.

Hab. Britain; France; Germany; Austria; Hungary; Italy; Finland; Arctic America.

This is the only species of the genus *Formica* which plunders the nests of other species of their young brood in the pupa state, which they bring up as slaves to their own community. The species is not uncommon in Hampshire, where it attacks the nests of *F. fusca* and *F. cunicularia*; in its nests have also been observed numerous individuals of the yellow ant, *F. flava*; it does not raise nests similar to the wood-ant, but belongs to the division of mining ants.

6. FORMICA EXSECTA. Pl. III. figs. 18–21. B.M.

Formica exsecta, *Nyl. Adno. Mon. Form. Bor.* 909. 9; *Form. Fr. et d'Algér.* 63. 17.
Foerst. Hym. Stud. Form. 23. 8.
Schenck, Beschr. Nass. Ameis. 38.
Mayr. Form. Austr. 68. 14; *Ungar. Ameis.* 10. 14.

Hab. France; Germany; Austria; Finland; Lapland; Hungary.

7. FORMICA PRESSILABRIS. B.M.

Formica pressilabris, *Nyl. Adno. Mon. Form. Bor.* 911. 10; *Form. Fr. et d'Algér.* 63.
Mayr. Form. Austr. 67. 13; *Ungar. Ameis.* 10. 13.

Hab. Scandinavia; Austria; Hungary; Finland.

8. FORMICA CUNICULARIA. Pl. III. figs. 12, 13, 23. B.M.

Formica cunicularia, *Latr. Hist. Nat. Fourm.* 151 ☿.
Huber, Rech. Fourm. t. 2. f. 11, 12, 13 ♂ ♀ ☿.
Losana, Fourm. Piem. 316.
St. Farg. Hym. i. 203. 5.
Nyl. Adno. Mon. Form. 913. 11; *Form. Fr. et d'Algér.* 64. 18.
Foerst. Hym. Stud. Form. 25. 9.
Schenck, Beschr. Nass. Ameis. 40.
Smith, Brit. Form. 103. 3.
Mayr. Form. Austr. 70. 15; *Ungar. Ameis.* 11. 15.
Formica stenoptera, *Foerst. Hym. Stud. Form.* 26. 10.

Hab. Britain; France; Germany; Austria; Hungary; Siberia; Finland.

9. FORMICA CINEREA.

Formica cinerea, *Mayr. Form. Austr.* 72. 16 ♂ ♀ ☿; *Ungar. Ameis.* 11. 17.
Nyl. Form. Fr. et d'Algér. 64. 19.

Hab. France; Germany; Hungary; Italy.

10. FORMICA FUSCA. Pl. III. fig. 14. B.M.

Formica fusca, *Linn. Faun. Suec.* 226. 1722; *Syst. Nat.* i. 963. 4.
Fabr. Ent. Syst. ii. 352. 11; *Syst. Piez.* 399. 13.
Schrank, Ins. Austr. 413.
Latr. Hist. Nat. Fourm. 159. pl. 6. f. 32. A. ☿. E. ♂.
Oliv. Encycl. Méth. vi. 493. 13.
Huber, Rech. Fourm. t. 2. f. 8, 9, 10.
Zett. Ins. Lapp. 448.
Brullé, Hist. Nat. Il. Canar. iii. 84. 3.
Losana, Form. Piem. 317.
St. Farg. Hym. i. 205. 6.
Nyl. Adno. Mon. Form. Bor. 919. 15; *Addit. Alter.* 30; *Form. Fr. et d'Algér.* 65. 20.
Schenck, Beschr. Nass. Ameis. 43.
Smith, Brit. Form. 104. 4.
Mayr. Form. Austr. 74. 17; *Ungar. Ameis.* 11. 16.

Formica glebaria, *Nyl. Adno. Mon. Form. Bor.* 917. 14.
Foerst. Hym. Stud. Form. 31. 13.

Hab. Britain; France; Germany; Austria; Hungary; Finland; Madeira.

11. FORMICA GAGATES. B.M.

Formica gagates, *Latr. Hist. Nat. Fourm.* 138. pl. 5. f. 26. A. ☿, 26 B. ♀.
Losana, Form. Piem. 315.
St. Farg. Hym. i. 200.
Mayr. Form. Austr. 75. 18; *Ungar. Ameis.* 11. 13.
Nyl. Form. Fr. et d'Algér. 65. 21.
Formica capsincola, *Schill. Bemerk. Schles.* 54.
Formica picea, *Nyl. Adno. Mon. Form. Bor.* 917. 13; *Addit. Adno. Mon. Form.* 1059.
Foerst. Hym. Stud. 30. 12.

Hab. France; Germany; Austria; Switzerland; Hungary; Finland.

12. FORMICA NASUTA.

Formica nasuta, *Nyl. Form. Fr. et d'Algér.* 66. 22.

Hab. France.

B. *Males very much smaller than the females.*

13. FORMICA FULIGINOSA. B.M.

Formica fuliginosa, *Latr. Hist. Nat. Fourm.* 140. pl. 5. f. 27. A. B. ☿, C. D. ♂, F. ♀.
Losana, Form. Piem. 315.
St. Farg. Hym. i. 200. 2.
Schill. Bemerk. Schles. 55.
Nyl. Adno. Mon. Form. Bor. 915. 12; *Form. Fr. et d'Algér.* 66. 23.
Foerst. Hym. Stud. Form. 28. 17.
Schenck, Beschr. Nass. Ameis. 45.
Smith, Brit. Form. 105, 5.
Mayr. Form. Austr. 79. 19; *Ungar. Ameis.* p. 12, 19.

Hab. Britain and throughout Europe.

14. FORMICA NIGRA. B.M.

Formica nigra, *Linn. Faun. Suec.* no. 1723; *Syst. Nat.* i. 963. 4 ♀.
Scop. Ent. Carn. 834?
Fabr. Syst. Ent. 392. 6; *Ent. Syst.* ii. 352. 10.

Formica nigra, *Losana, Form. Piem.* 317.
Latr. Hist. Nat. Fourm. 156.
Oliv. Encycl. Méth. vi. 492. 11.
St. Farg. Hym. i. 206. 7.
Nyl. Adno. Mon. Form. Bor. 920. 16; *Form. Fr. et d'Algér.* 67. 24.
Schenck, Beschr. Nass. Ameis. 49.
Smith, Brit. Form. 109. 8.
Mayr. Form. Austr. 83. 20; *Ungar. Ameis.* 13. 20.
Lasius niger, *Fabr. Syst. Piez.* 415. 1.
Formica fusca, *Foerst. Hym. Stud. Form.* 33.

Hab. Throughout Europe. Madeira.

15. FORMICA ALIENA.

Formica aliena, *Foerst. Hym. Stud. Form.* 36. 16.
Schenck, Beschr. Nass. Ameis. 51.
Mayr. Form. Austr. 88. 22.
Formica aliena, p. 13. 22.
Nyl. Form. Fr. et d'Algér. 68. 25.
Formica nigra (var.?). *Smith, Brit. Form.* 109. 8.

Hab. France; Germany; Austria; Switzerland; Hungary; Italy.

16. FORMICA EMARGINATA.

Formica emarginata, *Latr. Hist. Nat. Fourm.* 163. pl. 6. f. 33. A. ☿, 33 B. ♂, 33 D. ♀.
Oliv. Encycl. Méth. vi. 494. 16.
Losana, Form. Piem. 319.
St. Farg. Hym. i. 207. 8.
Nyl. Form. Fr. et d'Algér. 68. 26.
Formica brunnea, *Mayr. Form. Austr.* 86. 21 (exclus. synon.); *Ungar. Ameis.* 13. 21?

Hab. France; Germany; Austria; Hungary; Italy.

17. FORMICA BRUNNEA.

Formica brunnea, *Latr. Fourm.* 169. pl. 6. f. 35 ♀.
Losana, Form. Piem. 319.
Nyl. Form. Fr. et d'Algér. 68. 27.
Mayr. Ungar. Ameis. p. 13. 21.
Formica timida, *Foerst. Hym. Stud. Form.* 35. 15.
Schenck, Beschr. Nass. Ameis. 53.
Mayr. Form. Austr. 89. 23?

Hab. Britain; France; Germany; Italy, &c.; Georgia.

18. FORMICA RUBIGINOSA.

Formica rubiginosa, *Latr. Hist. Nat. Fourm.* 170 ♀.

Hab. France (Lyons).

19. FORMICA FLAVA. B.M.

Formica flava, *De Geer, Ins.* ii. 1089. 5. t. 42. f. 24–28.
Fabr. Ent. Syst. ii. 357. 34.
Latr. Hist. Nat. Fourm. 166. pl. 6. f. 36. A. ☿, B. ♂, E. ♀.
Oliv. Encycl. Méth. vi. 496. 29.
Losana, Form. Piem. 331.
St. Farg. Hym. i. 208. 9.
Nyl. Adno. Mon. Form. Bor. 922. 17; *Form. Fr. et d'Algér.* 69. 28.
Foerst. Hym. Stud. Form. 38. 17.
Schenck, Beschr. Nass. Ameis. 56.
Smith, Brit. Form. 108. 7.
Mayr. Form. Austr. 91. 24; *Ungar. Ameis.* 14. 24.

Hab. Britain; France; Germany; Austria; Hungary; Lapland; Finland.

20. FORMICA AFFINIS.

Formica affinis, *Schenck, Beschr. Nass. Ameis.* 62.
Mayr. Form. Austr. 96. 27.

Hab. Austria; Germany.

21. FORMICA UMBRATA. Pl. III. fig. 11. B.M.

Formica umbrata, *Nyl. Addit. Mon. Form. Bor. Eur.* 1048; *Form. Fr. et d'Algér.* 70. 29.
Smith, Append. Cat. Brit. Hym. 116; *Brit. Form.* 106. 6.
Foerst. Hym. Stud. Form. 39. 18.
Schenck, Beschr. Nass. Ameis. 59.
Mayr. Form. Austr. 93. 25; *Ungar. Ameis.* 14. 25.
Formica mixta, *Foerst. Hym. Stud. Form.* 41 & 72.

Hab. Britain; France; Germany; Austria; Hungary; Finland; Sweden.

22. FORMICA BICORNIS.

Formica bicornis, *Foerst. Hym. Stud. Form.* 41. 20.
Mayr. Form. Austr. 97.
Nyl. Form. Fr. et d'Algér. 70.
Formica affinis, *Schenck, Nass. Ameis.* 70?
Formica incisa, *Schenck, Nass. Ameis.* 63?

Hab. Germany.

23. FORMICA MIXTA.

Formica mixta, *Nyl. Addit. Adno. Mon. Form. Bor.* 1050; *Form. Fr. et d'Algér.* 70. 30.
Schenck, Beschr. Nass. Ameis. 64.
Mayr. Form. Austr. 95. 26.

Hab. France; Germany; Austria; Switzerland.

24. FORMICA VIATICA. Pl. III. fig. 4. B.M.

Formica viatica, *Fabr. Mant. Ins.* i. 308 ☿; *Ent. Syst.* ii. 356. 27; *Syst. Piez.* 404. 33.
Oliv. Encycl. Méth. vi. 495. 24.
Latr. Hist. Nat. Fourm. 173.
Nyl. Form. Fr. et d'Algér. 59. 12.
Ménétr. Mém. Acad. Imp. des Sc. St. Pétersb. vi. 306. 82 (1849).
Formica bicolor, *Fabr. Ent. Syst.* ii. 351. 5 ♂.
Latr. Hist. Nat. Fourm. 123.
Formica megalocola, *Foerst. Verh. d. naturh. Ver. d. Rheinl.* vii. 485.
Cataglyphis Fairmairei, *Foerst. Ver. d. naturh. Ver. d. Rheinl.* vii. 485 ♂.
Monocombus viaticus, *Mayr. Form. Austr.* 110. 1.

Hab. Europe (Germany; Spain). Africa (Nubia; Algeria).

25. FORMICA CURSOR.

Formica cursor, *Fonscol. Ann. Soc. Ent. Fr.* iv. 41 (1846) ♂ ♀ ☿.
Nyl. Form. Fr. et d'Algér. 60. 13.
Mayr. Ungar. Ameis. 7. 8.

Hab. France; Hungary.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells, the discoidal cells obsolete; the scale of the peduncle usually incrassate, generally much more so than in the first subdivision, sometimes subquadrate, sometimes subnodose; the ocelli obsolete in the workers.

Species of Europe. (Sp. 26–41.)

26. FORMICA ÆTHIOPS. B.M.

Formica æthiops, *Latr. Hist. Nat. Fourm.* 101 ♂ ♀ ☿. pl. 2. f. 4. A. B. ☿.

Formica æthiops, *Losana, Form. Piem. Mem. Accad. Torino*, xxxvii. 312.
St. Farg. Hym. i. 212. 13.
Mayr. Form. Austr. 41. 4; *Ungar. Ameis.* 5. 3.
Nyl. Form. Fr. et d'Algér. Ann. Sc. Nat. v. 54. 2 (1856).
Formica nigrata, *Nyl. Addit. Adno. Mon. Form.* 35?

Hab. France; Germany; Helsingfors.

27. FORMICA HERCULANEA. Pl. III. figs. 2, 15, 16. B.M.

Formica herculanea, *Linn. Faun. Suec.* 1720; *Syst. Nat.* i. 962. 1.
Fabr. Syst. Ent. 391. 1; *Ent. Syst.* ii. 349. 1; *Syst. Piez.* 395. 1.
Oliv. Encycl. Méth. vi. 491. 1.
St. Farg. Hym. i. 209. 11.
Zett. Ins. Lapp. 448.
Brullé, Expéd. Sc. de Morée, iii. 326. 720.
Nyl. Adno. Mon. Form. Bor. 894. 1; *Addit. Adno. Mon. Form.* 1044.
Foerst. Hym. Stud. Form. 9. 1.
Mayr. Form. Austr. 36. 2.
Ménétr. Mém. Acad. Imp. des Sc. St. Pétersb. vi. 307. 83.
Formica rufa, *Linn. Faun. Suec.* 1721 ☿.
Zett. Ins. Lapp. 448. 2 ☿, var.
Formica intermedia, *Zett. Ins. Lapp.* 448. 2 ☿, var.
Formica atra, *Zett. Ins. Lapp.* 450. 7.

Hab. Britain; France; Germany; Austria; Switzerland; Northern Europe; Siberia; Arctic America.

28. FORMICA LIGNIPERDA. Pl. III. fig. 17. B.M.

Formica ligniperda, *Latr. Hist. Nat. Fourm.* 88. t. 1. H. I. ♂, K. L. ♀, A. B. ☿.
St. Farg. Hym. i. 209. 11. t. 2. f. 1 ♀, 2 ☿.
Lucas, Expl. Sc. d'Algér. iii. 302.
Nyl. Adno. Mon. Form. 898. 2; *Addit. Mon. Form.* 1045; *Form. Fr. et d'Algér.* 55. 5.
Foerst. Hym. Stud. Form. 11. 2.
Schenck, Beschr. Nass. Ameis. 20.
Mayr. Form. Austr. 32. 1; *Ungar. Ameis.* p. 4. 1.

Hab. France; Germany; Austria; Northern Europe; Hungary.

29. FORMICA NIGRATA.

Formica nigrata, *Nyl. Addit. Alter. Adno. Mon. Form. Bor.* 35. 1.

Hab. Messina; South Russia.

30. FORMICA PUBESCENS. B.M.

Formica pubescens, *Fabr. Syst. Ent.* 392. 5; *Ent. Syst.* ii. 352. 9 ☿; *Syst. Piez.* 399. 12.
Oliv. Encycl. Méth. vi. 492. 10.
Latr. Hist. Nat. Fourm. 96. pl. 1. f. 2 A. B. ☿, D. E. ♂, H. I. ♀.
Losana, Form. Piem. Mem. Accad. Torino, xxxvii. 312.
Brullé, Hist. Nat. Il. Canar. iii. 84. 1.
St. Farg. Hym. i. 211. 12.
Nyl. Adno. Mon. Form. Bor. 899. 3; *Form. Fr. et d'Algér.* 56. 7.
Lucas, Explo. Sc. Algér. iii. 302.
Mayr. Form. Austr. 38. 3; *Ungar. Ameis.* 5. 2.
Formica fuscoptera, *Oliv. Encycl. Méth.* vi. 491. 2.
Formica vaga, *Scop. Ent. Carn.* 313.
Schrank, Enum. Ins. Austr. 414.

Hab. France; Germany; Austria; Hungary; Italy; Arctic America; Algeria.

31. FORMICA MARGINATA. B.M.

Formica marginata, *Latr. Hist. Nat. Fourm.* 103 ♀ ☿.
Losana, Form. Piem. Mem. Accad. Torino, xxxvii. 313.
Nyl. Form. Fr. et d'Algér. 54. 1.
Mayr. Form. Austr. 42. 5 ♂; *Ungar. Ameis.* 6. 4.

Hab. France; Germany; Austria; Hungary; Italy.

32. FORMICA OPACA. B.M.

Formica opaca, *Nyl. Form. Fr. et d'Alg. Ann. Sc. Nat.* v. 55. 3. (1856) ☿.
Savign. Egypt. x. 20. f. 7 ☿.

Hab. France; Algeria.

33. FORMICA FALLAX.

Formica fallax, *Nyl. Form. Fr. et d'Algér. Ann. Sc. Nat.* v. 57. 8 ♀ (1856).

Hab. France (Montpellier).

34. FORMICA AUSTRIACA.

Formica austriaca, *Mayr. Form. Austr.* 46. 7.
Nyl. Form. Fr. et d'Algér. 57 (note).

Hab. Austria.

35. FORMICA FUSCIPES.

Formica fuscipes, *Mayr. Form. Austr.* 45. 6 ☿.
Nyl. Form. Fr. et d'Algér. Ann. Sc. Nat. v. 57. 9 (1856).

Hab. Austria; Italy; France.

36. FORMICA TRUNCATA. B.M.

Formica truncata, *Spin. Ins. Ligur.* i. 244.
Duf. et Perr. Ann. Soc. Ent. Fr. ix. 49. t. 3. f. 52–55 (1840).
Mayr. Form. Austr. 47.
Nyl. Form. Fr. et d'Algér. 58. 10.

Hab. France; Italy.

37. FORMICA LATERALIS.

Formica lateralis, *Oliv. Encycl. Méth.* vi. 497. 34.
Latr. Hist. Nat. Fourm. 172.
St. Farg. Hym. i. 217. 22.
Mayr. Form. Austr. 50.
Nyl. Form. Fr. et d'Algér. 58. 11.
Formica bicolor, *Latr. Ess. Fourm. Fr.* 43.
Formica melanogastes, *Latr. Hist. Nat. Fourm.* 171. pl. 7. 39.
Formica axillaris, *Spin. Ins. Ligur.* i. 243.
Formica atricolor, *Nyl. Addit. Alter. Mon. Form.* 36.
Formica dalmatica, *Nyl. Addit. Alter. Mon. Form.* 37.
Formica foveolata, *Mayr. Beschreib. eing. neu. Ameis.*

Hab. South of France; Algeria.

38. FORMICA SYLVATICA.

Formica sylvatica, *Oliv. Encycl. Méth.* vi. 491. 3 ♀.
Latr. Hist. Nat. Fourm. 105.

Hab. France (forests in the South of France).

39. FORMICA PALLENS.

Formica pallens, *Nyl. Addit. Alter. Adno. Mon. Form. Bor.* 36. 2.

Hab. Messina.

40. FORMICA ATRICOLOR.

Formica atricolor, *Nyl. Addit. Alter. Adno. Mon. Form. Bor.* 36.

Hab. Messina.

41. FORMICA DALMATICA.

Formica Dalmatica, *Nyl. Addit. Alter. Adno. Mon. Form. Bor.* 37.

Hab. Dalmatia.

Species of India. Ceylon.—Singapore.—Malacca.—Java.—Sumatra.—Borneo.—Celebes.—China.—Philippine Islands. (Sp. 42 & 43.)

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal, and one discoidal cell. The scale of the peduncle flattened and vertical.

42. FORMICA CRINITA. B.M.

Female. Length 4 lines.—Ochraceous: very closely resembling *F. umbrata*; the head as wide as the thorax; the eyes ovate, placed a little above the middle at the sides of the head, which is thinly covered with a fine silky down; the mandibles pubescent. Thorax ovate, thinly sprinkled above with long pale hairs; wings slightly fuliginous, the nervures testaceous. Abdomen ovate, covered with a thick, long, pale yellow pubescence; the scale subovate, fringed with pale hairs.

Hab. Northern India.

43. FORMICA TAPROBANE. B.M.

Female. Length 2 lines.—Head, antennæ, thorax and legs red; abdomen black. Head subovate, the front convex, finely roughened and semi-opake, very slightly emarginate behind. The thorax rugose, the scutellum and metathorax coarsely so; the wings hyaline, the stigma large and brown, the nervures pale testaceous; the anterior pair with one discoidal cell; the tarsi pale testaceous, the claw-joint black. Abdomen black, shining, and globose.

Hab. Ceylon.

This may possibly be the *F. abdominalis* of Latreille, but as the neuration of the wings cannot be determined from his description, their identity is uncertain.

SUBDIVISION 2. (Sp. 44–95.)

Anterior wings with one marginal and two submarginal cells, the discoidal cells obsolete. The scale of the peduncle usually incrassate, generally much more so than in the first subdivision, sometimes subquadrate, sometimes subnodose.

44. FORMICA COMPRESSA. B.M.

Formica compressa, *Fabr. Mant. Ins.* i. 307. 2 ♀; *Ent. Syst.* ii. 350. 2; *Syst. Piez.* 396. 2.
Oliv. Encycl. Méth. vi. 491.
Latr. Hist. Nat. Fourm. 111.

Formica compressa, *Hardw. Zool. Journ.* iv. 114.
St. Farg. Hym. i. 214. 17.
Jerdon, Madr. Journ. (1851) 119 ; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 103.
Smith, Journ. Proc. Linn. Soc. ii. 53.
Formica indefessa, *Sykes, Trans. Ent. Soc. Lond.* i. 104. pl. 13. f. 6.

Hab. India (Madras, Bengal); Hong Kong; North China (Shanghai); Philippine Islands; Australia?

Female. Length 6–7 lines.—Black: the flagellum, coxæ and femora, and the base of the abdomen beneath, usually more or less ferruginous; the head rather narrower than the thorax; the body shining; the wings hyaline, slightly fuscous anteriorly, with the nervures fusco-ferruginous; the scale emarginate above, subquadrate, with the lateral angles above rounded. Abdomen ovate.

Male. Length 4 lines.—Black: the head small, subtriangular above; the body beneath, the legs, mandibles and flagellum usually testaceous, differing in depth of colour; wings subhyaline, yellowish anteriorly.

Mr. Jerdon says, "This species is well known in India as the Black Ant; it is found in every part of the country; it lives in numerous societies under ground; the warriors are very numerous. At certain times great numbers of the winged males and females are seen at the mouth of the nest; they remain there for several days, when they take wing in vast numbers, always at night."

45. FORMICA GIGAS. Pl. III. fig. 30. B.M.

Formica gigas, *Latr. Hist. Nat. Fourm.* 105. pl. 2. f. 6. ☿ major.
Smith, Proc. Linn. Soc. ii. 53.
Formica angusticollis, *Jerdon, Madras Journ. Lit. and Sc.* (1851) 120?

Worker minor. Length 8 lines.—More elongate and narrower than the larger worker; the head much narrower and not widened behind the eyes; the legs proportionably longer, the scale of the abdomen of the same conical form.

Female. Length 12 lines.—Of the same colour as the workers, the head scarcely as wide as the thorax; the eyes placed high on the head; the head elongate; the thorax ovate; the scutellum very convex; the scale of the abdomen deeply notched.

Male. Length 8 lines.—Blackish-brown: the coxæ, femora, apical joints of the tarsi and the flagellum pale testaceous; thorax elongate-ovate, shining on the disk; wings hyaline, the anterior pair yellowish in front; the head much narrower than the thorax.

Hab. India; Malacca; Singapore; Borneo.

46. FORMICA CINERASCENS.

Formica cinerascens, *Fabr. Ent. Syst.* ii. 353. 15 ♀ ; *Syst. Piez.* 401. 19.
Oliv. Encycl. Méth. vi. 494. 15.
Latr. Hist. Nat. Fourm. 280.
St. Farg. Hym. i. 214. 18.
Jerdon, Madr. Journ. Lit. and Sc. (1851) 123; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 106. 38.

Hab. India (Tranquebar and the Carnatic).

47. FORMICA ASSIMILIS.

Formica assimilis, *Jerdon, Madr. Journ. Lit. and Sc.* (1851) 125; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 42.

Hab. India (Malabar).

48. FORMICA CYLINDRICA.

Formica cylindrica, *Fabr. Ent. Syst. Supp.* 280. 31 ; *Syst. Piez.* 404. 36.
Latr. Hist. Nat. Fourm. 121. t. 4. f. 19.

Hab. India; Isle of France.

49. FORMICA ABDOMINALIS.

Formica abdominalis, *Latr. Hist. Nat. Ins.* 175. pl. 3. f. 13.

Hab. India.

50. FORMICA ELONGATA.

Formica elongata, *Fabr. Ent. Syst.* ii. 354.

Hab. Tranquebar.

51. FORMICA CONICA.

Formica conica, *Fabr. Ent. Syst. Supp.* 279. 27.
Latr. Hist. Nat. Fourm. 283.
Lasius conicus, *Fabr. Syst. Piez.* 418.

Hab. Tranquebar.

52. FORMICA NANA.

Formica nana, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 125 ♀; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 108. 44.

Hab. India (Mysore).

53. FORMICA RUFOGLAUCA.

Formica rufoglauca, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 124; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 4.

Hab. India (the Carnatic).

54. FORMICA PHYLLOPHILA.

Formica phyllophila, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 125 ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 43.

Hab. India.

55. FORMICA CARBONARIA.

Formica carbonaria, *Latr. Hist. Nat. Fourm.* 114. pt. 3. f. 8 ☿.

Hab. India.

56. FORMICA RUFICORNIS.

Formica ruficornis, *Fabr. Syst. Piez.* 397. 6.

Hab. India.

57. FORMICA STRICTA. B.M.

Formica stricta, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 123 ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 105. 37. *Smith, Journ. Proc. Linn. Soc.* ii. 53. 3.

Hab. India (Malabar); Borneo (Sarawak).

The insect which I take to be the *F. stricta* has the head square, or rather oblong; the insect is of an obscure blackish-green and covered with cinereous pile; the eyes are placed high at the sides of the head; the face from the base of the clypeus is obliquely truncated, the truncation being roughly striated; the thorax is narrowed posteriorly, and the metathorax has two little points or tubercles, one on each side; the scale of the peduncle is raised, incrassate, rounded and emarginate above; the legs shining black. The small worker has the head rounder, not truncated in front.

The female has the head truncated in front; the thorax and the abdomen elongate-ovate, the former smooth and shining above; the wings subhyaline, the nervures testaceous, with a narrow fuscous stain running along the course of the nervures; the insect tinged with green, the abdomen covered with glittering cinereous pile.

58. FORMICA TIMIDA.

Formica timida, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 122; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 105. 36.

Hab. India (Malabar coast).

59. FORMICA VAGANS.

Formica vagans, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 124 ♀ ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 107. 41.

Hab. India (the Carnatic).

60. FORMICA VELOX.

Formica velox, *Jerdon, Madr. Journ. Lit. & Sc.* (1851)124; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 106. 39.

Hab. India (Malabar).

61. FORMICA SMARAGDINA. Pl. III. fig. 3. B.M.

Formica smaragdina, *Fabr. Spec. Ins.* i. 488. 2 ♀; *Mant.* i. 307. 3; *Ent. Syst.* ii. 350. 3; *Syst. Piez.* 397. 4.
Christ. Hym. t. 60. 1.
Gmel. Syst. Nat. Ins. ii. 2797. 20.
Oliv. Encycl. Méth. vi. 491. 5.
Latr. Hist. Nat. Fourm. 176. pl. 3. f. 18.
St. Farg. Hym. i. 218. 25.
Jerdon, Madr. Journ. Nat. Hist. (1851) 121 ♂ ♀ ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 104.
Smith, Proc. Linn. Soc. ii. 53.
Formica viridis, *Kirby, Trans. Linn. Soc.* xii. 477 ♀.

Hab. India (Malabar); Ceylon; Sumatra; Celebes; Philippine Islands.

This ant is plentiful in Malabar and the wooded parts of India; it forms a nest of living leaves which it draws together without detaching from the branch, and unites with a fine white web; sometimes the nest is a foot in diameter, but usually smaller. These societies are very numerous. (*Jerdon, Madras Journ.*)

The short palpi and somewhat different neuration of the wings will probably render it necessary to remove this species from the genus *Formica*, in which for the present we retain it.

62. FORMICA ARDENS.

Female. Length 8–9 lines.—Black; subopake: the flagellum and two or three of the apical joints of the tarsi pale rufo-testaceous; the clypeus, mandibles, coxæ, femora and the abdomen more or less obscure rufo-piceous; the mandibles punctured and

grooved at their apex, furnished with fine stout teeth; the clypeus carinated in the middle; the head delicately shagreened, a little wider than the thorax and emarginate behind. The mesothorax with a central longitudinal slightly impressed line which extends from base to apex; a similarly impressed bent line is situated half-way between the centre and the tegulæ; wings fusco-hyaline, clearest towards their apical margins; the nervures fusco-ferruginous. The scale of the peduncle subquadrate, rounded, and emarginate above; the abdomen has a few scattered short pale hairs, and the apical margins of the segments narrowly rufo-piceous.

Hab. India (Deccan). (Coll. East India House.)

63. FORMICA IMPETUOSA.

Worker. Length 6 lines.—Opake-black, with the flagellum and two apical joints of the tarsi ferruginous: head large, much wider than the thorax, deeply emarginate behind; the clypeus with a central longitudinal carina, which is produced, and forms a small tooth in the middle of the anterior margin, which is straight. The head and thorax are delicately shagreened, the latter elongate and compressed posteriorly; legs elongate, smooth and shining, destitute of pubescence, or with a few short ferruginous hairs on the tibiæ at their apex beneath, and also a few on the tarsi. Abdomen ovate; the scale of the peduncle incrassate, narrow, rounded in front, and flat and perpendicular behind, its margin slightly notched above.

Hab. Bombay. (Coll. East India House.)

64. FORMICA CALLIDA.

Worker. Length 3–5 lines.—Very variable in colour: some individuals are black, with the flagellum, legs, thorax beneath, scale of the peduncle, and base of the abdomen beneath more or less ferruginous; other individuals have the head, thorax, scale of the peduncle and legs pale ferruginous: the larger and smaller individuals also vary in the relative proportions of the head and thorax, but in all it is oblong-quadrate, with the angles rounded, wider than the thorax and emarginate behind; the clypeus with a longitudinal carina in the middle; a smooth abbreviated line between the antennæ. Thorax compressed; legs elongate and slender. Abdomen ovate; the scale of the peduncle oblong, narrowed to its base, and rounded above.

Hab. India (Deccan). (Coll. East India House.)

Probably the worker of *F. compressa*, being the small form of that species.

65. FORMICA LUTEA. B.M.

Female. Length 5 lines.—Yellow: the head oblong, widest at the vertex, which is slightly emarginate; eyes ovate, placed rather high on the sides of the head; the clypeus subcarinate in the middle, slightly emarginate anteriorly; the mandibles stout, triangular, toothed on their inner margin, the teeth black. Thorax oblong-ovate, very smooth and shining above; the point of attachment of the wings black; the scale of the peduncle ovate, emarginate above. Abdomen ovate, smooth and shining; the head, thorax and abdomen sprinkled with long, erect, pale hairs.

Hab. Northern India.

66. FORMICA GIBBOSA. Pl. II. fig. 2. B.M.

Worker. Length 3 lines.—Head, scape of the antennæ, thorax and legs fusco-testaceous; the flagellum, mandibles, tarsi and abdomen pale testaceous, varying sometimes in being almost entirely pale. The antennæ a little longer than the head and thorax; eyes black and prominent, placed laterally about the middle of the head. Thorax not so wide as the head, the prothorax rounded at the sides, the meso- and metathorax narrower, the latter flattened and oblong-quadrate above, the lateral margins raised; behind obliquely truncate; a deep strangulation between the meso- and metathorax, the latter being elevated; the legs slightly pubescent. Abdomen globose, and covered with pale golden-yellow pubescence; the scale of the peduncle incrassate, its anterior face rounder or concave, flattened, and slightly hollowed out behind.

Hab. India?.

This species constructs its nest on leaves, the texture of which closely resembles that of many small species of Vespidæ; in fact it is quite possible that it may take possession of a Vespidious nest, and adapt it to its own purposes: the worker greatly resembles in form that of the European species *Formica lateralis*.

67. FORMICA LONGIPES.

Formica longipes, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 122; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 105. 35 (1854).

Hab. India (in forests). Malacca.

68. FORMICA VARIEGATA. B.M.

Female. Length 5½ lines.—Reddish-brown, variegated with yellow markings: the head oblong, widest at the vertex; the

eyes ovate, situated a little above the middle at the sides of the head; the vertex slightly emarginate; the clypeus truncate in front, and having a slightly elevated central carina; the mandibles stout, shining, with seven acute teeth on their inner margin; the flagellum and tips of the scape pale ferruginous; the head beneath and the region of the clypeus paler than the vertex, which is opake. Thorax and legs pale ferruginous; the mesothorax darker, and sometimes a darker tinge on the scutellum and metathorax; the disk of the thorax opake; wings flavo-hyaline, the nervures pale rufo-testaceous. Abdomen ovate; the base and a spot on each side of the two following segments pale rufo-testaceous; the maculæ on the second segment frequently united in the middle; the scale of the peduncle pale, subovate, and emarginate above; the abdomen sprinkled with long pale hairs, and with the middle beneath pale.

Worker. Length 3½–4 lines.—Differs from the female in having the head large, much wider than the thorax, the thorax much attenuated posteriorly, and the scale of the peduncle not emarginate; the head is also darker in colour and more deeply emarginate behind; the abdomen is usually only pale at the base and on each side of the second segment.

Hab. Ceylon; Singapore.

This species very much resembles the *F. sexguttata* of Fabricius.

69. FORMICA MITIS. B.M.

Worker. Length 3½ lines.—The head, scape and abdomen fusco-testaceous. The head oblong, not wider than thorax; the eyes ovate, of moderate size, placed high on the sides of the head; the clypeus carinate in the middle, the anterior margin rounded; the clypeus paler than the vertex. Thorax elongate, much compressed behind; the disk of the thorax arched lengthways; the legs palest at their base and apex; the scale of the peduncle somewhat conical, pointed above; the base of the abdomen pale, the margins of the segments fringed with a few long pale hairs.

Hab. Ceylon.

70. FORMICA VENTRALIS. B.M.

Female. Length 6 lines.—Black: the flagellum, mandibles, anterior margin of the face, and the head behind more or less ferruginous; the thorax and base of the abdomen pale rufo-testaceous, the coxæ and femora of the same colour; the posterior margins of the first, second and third segments of the abdomen pale rufo-testaceous; the scale of the peduncle pale, with its

upper margin rounded and entire; wings hyaline, the superior pair yellowish along their anterior margin, the nervures pale rufo-testaceous.

Hab. Ceylon.

71. FORMICA BACCHUS. B.M.

Worker. Length 4½ lines.—Black: the flagellum, thorax, legs and scale of the peduncle rufo-testaceous; the tibiæ and basal joint of the tarsi more or less dusky; head large and cordate; eyes ovate, placed above the middle at the sides of the head; the head opake; the clypeus subcarinate in the middle and shining, as well as the mandibles, the latter armed with six stout teeth; the extreme base of the scape pale testaceous. Thorax much narrower than the head, rounded anteriorly and compressed behind. Abdomen: the scale incrassate, narrowed to a thin edge at its upper margin, which is rounded; the scale is narrow, rounded in front and straight behind; the abdomen oblong-ovate; the head, thorax and abdomen have a few scattered, long, erect pale hairs.

Hab. Ceylon.

72. FORMICA OBLONGA. B.M.

Female. Length 4¾ lines.—Obscure rufo-testaceous, the head anteriorly and the abdomen being darkest; the clypeus and a space between the antennæ, as well as the flagellum, pale rufo-testaceous; the mandibles with seven acute teeth; the clypeus truncate anteriorly. Thorax elongate-ovate, smooth and shining, the disk darkest; the legs pale rufo-testaceous; the femora compressed and semitransparent. The scale of the peduncle ovate, very faintly notched above; the abdomen elongate-ovate, smooth and shining; the abdomen wider than the thorax and head, the two latter of about equal width.

Hab. Birmah.

73. FORMICA TINCTA. B.M.

Female. Length 5½ lines. — Rufo-testaceous, irregularly stained with black; the front of the head with a black spot enclosing the ocelli; the mandibles dark rufo-piceous, armed with seven sharp teeth; the head the same width as the thorax. Thorax elongate-ovate, very smooth and shining; the sides of the disk of the thorax slightly fuscous; wings yellowish-hyaline, with the nervures pale ferruginous. Abdomen ovate, very smooth and shining; the basal segment and the apical margins of the

three following, and the base of the fifth black; sprinkled with a few pale ferruginous hairs; the scale ovate, emarginate above.

Hab. Birmah.

This species somewhat resembles the *F. variegata*, but it is a larger and broader insect; the scale of the peduncle is of a different form, being broader; the thorax is perfectly oval, not narrow behind, and it is also much more polished and shining.

74. FORMICA DILIGENS.

Female. Length 9 lines.—Dark rufo-piceous; the antennæ, mandibles, thorax at the sides and beneath, the metathorax and legs ferruginous. In form closely resembling *Formica ligniperda*; the head shining; the antennæ, the anterior margin of the face and clypeus, and the mandibles ferruginous. The wings subhyaline, the nervures and tegulæ pale ferruginous. Abdomen shining, pale ferruginous beneath; the scale of the peduncle subquadrate, slightly emarginate its entire width above.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

75. FORMICA IRRITANS. B.M.

Worker. Length 2½–6 lines.—Head and abdomen nigro-fuscous; antennæ, thorax, abdomen, scale of the peduncle and the legs ferruginous. Elongate and slender; head ovate; the scape black, with the apex ferruginous. Thorax elongate, compressed, the prothorax slightly dilated at the sides; the scale of the peduncle incrassate, rounded in front and truncate behind. Abdomen ovate; the entire insect sprinkled with erect pale hairs.

Worker minor, length 3 lines; the antennæ entirely ferruginous.

Hab. Malacca.

76. FORMICA BADIA.

Worker. Length 2½–3½ lines.—Chestnut-brown: closely resembling *Polyergus rufescens*, but with the mandibles toothed; head subovate; the eyes ovate, placed high on the sides of the head towards the vertex. Thorax rounded in front, compressed behind; the metathorax obliquely truncated. Abdomen oblong-ovate, the apex fuscous; the scale of the peduncle incrassate, slightly rounded in front and flattened behind.

Hab. Singapore; Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

77. FORMICA GRACILIPES. B.M.

Worker. Length 2 lines.—Pale ferruginous: abdomen dark

rufo-piceous, with the base palest; in some examples the colour is pale brown; antennæ longer than the body; head ovate, narrowed behind, and wider than the thorax; the eyes black and prominent. Thorax elongate, compressed, the prothorax narrowed into a slender neck; legs very much elongated, the posterior pair one-third longer than the insect, the tibiæ and tarsi pale testaceous. The abdominal scale incrassate, rounded in front and truncate behind; the abdomen short and ovate.

Hab. Singapore.

78. FORMICA ARROGANS. B.M.

Worker. Length 4 lines.—Fusco-testaceous: mandibles black; the flagellum pale testaceous; the vertex deeply emarginate; the head more than twice the width of the thorax. Thorax compressed posteriorly; the legs pale rufo-testaceous; scale incrassate, rounded in front, truncated posteriorly. Abdomen ovate, the posterior margin of the segments pale rufo-testaceous.

Hab. Singapore.

79. FORMICA CAMELINA. B.M.

Worker. Length 5 lines.—Black, elongate and slender; the head narrowed behind into a sort of neck; the eyes round, placed forwards at the sides of the head, nearly opposite the insertion of the antennæ. Thorax much narrowed in front, compressed in the middle, with the metathorax swollen and elevated above the prothorax; the legs elongate and sprinkled with long pale hairs. Abdomen ovate, pointed at the apex, and sprinkled with pale glittering hairs; the scale of the peduncle incrassate, somewhat pear-shaped.

Hab. Singapore.

80. FORMICA FESTINA. B.M.

Female. Length 9–10 lines.—Black and shining; thorax beneath, the metathorax, legs and petiole of the abdomen pale ferruginous; the abdomen piceous beneath. Head oblong-quadrate, the mandibles and anterior margin of the face rufo-piceous; the flagellum fulvous. Thorax: beneath, the sides, the metathorax and legs pale ferruginous; the scale subovate and emarginate above; the apical margins of the segments of the abdomen rufo-piceous; beneath entirely rufo-testaceous.

Hab. Borneo (Sarawak); Java; China.

Closely resembling the *Formica ligniperda*; apparently the exotic form of that species.

81. FORMICA MISTURA.

Female. Length 6½ lines.—Black: the hinder margin of the vertex, the coxæ, femora and tips of the tarsi, the scale of the peduncle and the base of the abdomen more or less obscurely ferruginous. Head: the mandibles, clypeus and anterior angles of the face punctured; the clypeus slightly emarginate anteriorly; the flagellum fusco-ferruginous. Thorax oblong-ovate; wings subhyaline, the nervures rufo-testaceous. Abdomen ovate; the scale of the peduncle subovate with a slight notch above. Head, thorax, legs and abdomen with a thin fulvous pubescence.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

82. FORMICA PILOSA.

Worker. Length 3 lines.—Black, densely covered with a fine silky cinereous pile. Head much wider than the thorax; eyes ovate, placed laterally rather high on the head; the anterior part of the clypeus truncate, the sides of the face produced beyond its anterior margin; a shallow fovea on the front. Thorax compressed behind. Abdomen ovate, covered with short pale pubescence; the scale of the peduncle incrassate, terminating in a blunt point above.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

83. FORMICA RUFICEPS.

Worker. Length 4 lines.—Black: the head and the thorax in front ferruginous; the head smooth, shining, and much wider than the thorax; the mandibles and scape black, the apex of the former ferruginous; the flagellum pale rufo-testaceous. The thorax much compressed behind; the tips of the coxæ, femora and tibiæ, and the tarsi ferruginous. Abdomen smooth and shining; the scale of the peduncle ovate, its apex acuminate; the legs and the apex of the abdomen with a thin short pale pubescence.

Worker minor only differs in size and in having the mandibles ferruginous.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

84. FORMICA FERVENS.

Worker. Length 4 lines.—Head and abdomen black, obscurely rufo-piceous; thorax and legs pale ferruginous. The head subopake, with the clypeus and mandibles shining; the flagellum pale ferruginous; the anterior margin of the clypeus slightly

emarginate. Thorax usually more or less fuscous in front, compressed behind. Abdomen shining, the apical margins of the segments narrowly testaceous; the scale of the peduncle ovate and ferruginous.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

85. FORMICA IRRITABILIS. B.M.

Worker. Length 4 lines.—Head, thorax, and scale of the abdomen, ferruginous, the legs rufo-fuscous; abdomen nearly black; the scape black, with the extreme base and apex as well as the flagellum ferruginous, the latter more or less fuscous above; the vertex has sometimes a fuscous stain; the mandibles nigro-piceous, their apex ferruginous. Thorax compressed behind, much narrower than the head, both thinly sprinkled with erect reddish hairs; the legs nigro-fuscous, with the base and apex of the joints, and sometimes with the coxæ and apical joints of the tarsi, ferruginous. Abdomen: the scale oblong-ovate, pointed above; the apical margins of the segments with a thin fringe of reddish-yellow hairs.

Hab. Borneo (Sarawak).

86. FORMICA SEDULA.

Worker. Length 5 lines.—Head and thorax opake-black, the mandibles and legs shining black; the abdomen chestnut-red. The mandibles with five stout teeth, and with their apex striated; the head much wider than the thorax, deeply emarginate behind; the flagellum obscurely ferruginous. Thorax compressed behind; the trochanters and apical joints of the tarsi ferruginous. Abdomen ovate; the scale of the peduncle subquadrate, slightly emarginate above; the abdomen thinly sprinkled with reddish pubescence, and a few scattered black hairs on the head and thorax.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

87. FORMICA EXASPERATA.

Worker. Length 5½ lines.—Head, thorax, and scale of the peduncle, blood-red, the abdomen black; a dark stain in front of the anterior stemma, and usually a second at the insertion of the antennæ; these stains sometimes obsolete; the mandibles black, stout, punctured and strongly toothed; the head much wider than the thorax and deeply emarginate behind. Thorax compressed behind, usually more or less stained at the sides; the tibiæ and tarsi more or less fuscous. Abdomen with the

apical margins of the segments more or less rufo-piceous; the scale of the peduncle ovate and entire; a thin pale reddish pubescence on the head, thorax and legs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

88. FORMICA TENUIPES. B.M.

Female. Length 4 lines.—Rufo-castaneous, smooth and shining; mandibles stout, armed with five strong black teeth; antennæ pale rufo-testaceous. Thorax ovate, smooth and shining; wings hyaline, the nervures pale testaceous; scale quadrate, emarginate above; the legs pale rufo-testaceous; the femora much compressed. Abdomen ovate, smooth and shining.

Hab. Borneo (Sarawak).

89. FORMICA PALLIDA. B.M.

Worker. Length 2½–3 lines.—Pale rufo-testaceous, smooth, shining and slightly pilose; the head much wider than the thorax, the vertex widely and deeply emarginate; mandibles dark rufo-piceous; the flagellum and legs paler than the rest of the body; the thorax compressed behind; the scale narrow, elongate-ovate; abdomen subglobose and thinly sprinkled with long pale hairs; the head and thorax also slightly pubescent.

Hab. Borneo (Sarawak).

This species varies in the colouring of different individuals: some examples have the head as well as the abdomen of a deeper hue.

90. FORMICA VIGILANS. B.M.

Worker. Length 5½ lines.—Head, thorax, and scale of the abdomen, blood-red; the abdomen and legs black; the antennæ, eyes and mandibles black; the face anteriorly, the clypeus and mandibles, smooth and shining, the latter with five stout teeth; the flagellum obscurely rufo-fuscous; the head posteriorly deeply emarginate and opake; the thorax opake, compressed; the coxæ, extreme base of the femora and tibiæ, and the apical joints of the tarsi, ferruginous; the scale ferruginous, ovate and entire; the extreme base of the abdomen ferruginous. The entire insect thinly sprinkled with erect black pubescence.

Hab. Borneo (Sarawak).

In general form closely resembling *F. compressa*; the thorax is shorter, the legs stouter, and *F. compressa* is not pubesce-

91. FORMICA PLACIDA.

Female. Length 6 lines.—Head, antennæ, thorax, legs and scale of the peduncle, ferruginous; the legs and thorax beneath palest; abdomen brown-black, smooth and shining; the head scarcely wider than the thorax, both slightly shining; wings subhyaline, the nervures pale testaceous; scale of the peduncle ovate, with a deep notch above. Abdomen ovate and impunctate.

Hab. Java. (Coll. East India House.)

92. FORMICA TRIFASCIATA.

Female. Length 4 lines.—Ochraceous, with three fuscous stripes on the thorax, the central one abbreviated; the abdomen fuscous, with the apical margins of the segments ochraceous; the node of the peduncle incrassate, oblong, narrowed and slightly notched at the apex above; the tibiæ and tarsi paler than the femora; wings fusco-hyaline, the first submarginal cell elongate, of nearly equal width throughout, very slightly widened at the apex; the second submarginal cell complete, extending to the apex of the wing; the head small, much narrower than the thorax, with the eyes prominent.

Hab. Java. (Coll. East India House.)

93. FORMICA SINGULARIS.

Worker. Length 6 lines.—Head ovate, red; antennæ slender, as long as the thorax, and black; clypeus subcarinate; eyes black and ovate. Thorax black, elongate, narrow, widest in front, and narrowest in the middle; the metathorax convex, evenly rounded from base to apex; the legs elongate; the thorax and legs covered with a fine silky pile, and sprinkled with a few long erect pale hairs. Abdomen black, ovate, somewhat pointed at the apex, covered with a fine silky slightly golden pile, and sprinkled with long erect pale hairs; the scale of the peduncle forming a blunt rounded node.

Hab. Java.

This probably belongs to a different genus, or at least to a very distinct section, but, only being acquainted with one sex, I leave it at present in the genus *Formica*; the palpi are more elongate than is usual, the joints of the antennæ are much longer and more slender, the insect having very much the appearance of a species of *Dolichoderus*.

94. FORMICA LUCTUOSA.

Female. Length 7½ lines.—Shining black: the vertex sub-

opake; the head deeply emarginate behind; the anterior margin of the clypeus truncate. Thorax ovate; the mesothorax with a longitudinal impressed line on each side; the metathorax delicately shagreened; wings subhyaline, the nervures rufo-testaceous, with a fuscous stain running along their course. Abdomen ovate, smooth and shining; the scale of the peduncle quadrate, the upper margin entire; the vertex of the head, the sides of the pro- and metathorax with a few reddish-brown hairs.

Hab. Sumatra.

95. FORMICA QUADRISECTA. B.M.

Female. Length 7 lines.—Head and thorax dark rufo-fuscous; abdomen brown; the former oblong, widest at the vertex, which is deeply emarginate behind; mandibles armed with five strong teeth; the flagellum pale rufo-testaceous. Thorax oblong-ovate and narrow; the metathorax truncate, the truncation slightly oblique; the wings subhyaline, with a yellow tinge, the nervures pale testaceous; the legs rufo-piceous. Abdomen ovate; the scale of the peduncle quadrate, the superior margin slightly rounded.

Hab. Philippine Islands.

Species of Africa.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells; the discoidal cells obsolete. The scale of the peduncle usually incrassate, generally much more so than in the first subdivision, sometimes subquadrate, occasionally subnodose. (Sp. 96–121.)

Note.—We are acquainted with several species belonging to the first subdivision, which are found in North Africa; these, however, are also common to Europe, and are included in the European series; they are, *F. viatica, lateralis, pubescens, opaca* and *marginata.*

96. FORMICA MACULATA. B.M.

Formica maculata, *Fabr. Spec. Ins.* i. 491. 15; *Ent. Syst.* ii. 356. 25; *Syst. Piez.* 403. 29. (Type in *Mus. Dom. Banks.*)
Oliv. Encycl. Méth. vi. 495. 22.
Latr. Hist. Nat. Fourm. 283.
St. Farg. Hym. i. 215. 19.

Hab. Africa.

The typical specimen in the Banksian Collection is a large

form of the worker, 6 lines in length; the head much wider than the thorax or abdomen, and deeply emarginate behind; eyes ovate, placed inwards opposite the termination of the carinæ which run upwards from the base of the clypeus; the clypeus with a central longitudinal carina; the flagellum ferruginous; the thorax and legs rufo-testaceous, the disk of the former more or less black or fuscous above; much compressed towards the apex; the tibiæ and tarsi more or less fuscous, the former sometimes black. Abdomen ovate, with a pale testaceous macula on each side of the three basal segments.

Worker minor. Length 5 lines, some examples smaller.—This form differs in having the head elongate, about the same width as the abdomen, and the legs and thorax are usually paler than in the larger form; in some examples the head and thorax are pale red. The female resembles the smaller form of the worker, in having the head elongate, very little wider than the thorax; the thorax elongate-ovate; the abdomen ovate, the maculation very dark and decided.

Amongst a series of specimens of this species from Port Natal, some of the small forms of the worker have the head, thorax and legs entirely pale rufo-testaceous; specimens of the large worker also occur with the head fuscous anteriorly, and the vertex red; the thorax is also occasionally entirely red. Specimens of what is in all probability the male, have the head very small, the eyes black, ovate and prominent, the whole body of the insect being pale rufo-testaceous; the head rounded behind the eyes, and produced before them, the sides being parallel; the anterior margin of the clypeus angular. The thorax elongate-ovate; the wings flavo-hyaline; the tibiæ fuscous. Abdomen lanceolate, with the apical segments more or less fuscous.

97. FORMICA VIRESCENS. Pl. III. figs. 24–27. B.M.

Formica virescens, *Fabr. Syst. Ent.* 392. 9 ☿; *Spec. Ins.* i. 490. 13; *Mant. Ins.* i. 308. 16; *Ent. Syst.* ii. 355. 23; and *Cab. Mus. Dom. Banks.*

Oliv. Encycl. Méth. vi. 494. 20.

Gmelin, Syst. Nat. Ins. ii. 2800. 32.

Formica longinoda, *Latr. Hist. Nat. Fourm.* 184 ☿.

Lasius virescens, *Fabr. Syst. Piez.* 417. 8.

Formica macra, *Guér. Voy. Coq. Zool.* ii. 202; *Atlas*, t. 8. f. 1, 1 *a*, 1 *b* ☿.

This species we consider to be the African and Australian representative of the *F. smaragdina*; the species is rather smaller, the female has shorter wings, the nervures blacker, and with a fuscous stain along their course; it also differs from *F. smarag-*

dina in having the scale or node of the abdomen rather longer, and in its being elevated anteriorly. The worker of *F. virescens* has the head more convex behind the eyes than in *F. smaragdina*, and the petiole of the abdomen is shorter, and of a somewhat different form.

The male of *F. virescens* is 3 lines in length, of a pale rufo-testaceous colour, varying in depth in different specimens, and is covered with short thin pale pubescence; the head with the vertex subquadrate, slightly narrowed posteriorly, with the angles rounded; the eyes larger than in the female; the first joint of the flagellum clavate, nearly as long as the two following, the rest being subovate and of nearly equal length. Thorax subovate, narrowed posteriorly; the wings ample, hyaline, with the nervures ferruginous. The legs very slender and elongate. Abdomen rounded, the petiole narrowed at the base.

Hab. Africa; Australia.

98. FORMICA CRUENTATA.

Formica cruentata, *Latr. Hist. Nat. Fourm.* 116. pl. 3. f. 10 ☿.
Formica pilosa, *Oliv. Encycl. Méth.*, v. 498. 39?
De Geer, Ins. vii. 612. pl. 45. f. 13, 14?

Hab. Africa?

This species very closely resembles, if indeed it be not identical with, the *F. opaca* of Nylander.

99. FORMICA OBTUSA. B.M.

Worker. Length 5 lines.—Head and thorax anteriorly obscure red, otherwise black and shining; the flagellum and base of the scape ferruginous. Head very large, much wider than the thorax; the ocelli very minute and distinct. Thorax rounded in front, truncate behind, and gradually narrowed and compressed, being somewhat wedge-shaped; divided above by two transverse sutures. Abdomen ovate, covered with pale golden pubescence; the node of the peduncle incrassate, above emarginate.

Hab. Egypt.

This species is remarkable for its short broad appearance, and for having the ocelli distinct; in the type-specimen the greater portion of the pubescence is rubbed off.

100. FORMICA MICANS.

Formica micans, *Nyl. Fourm. Fr. et d'Alg. Ann. Sc. Nat.* v. 55. 4 ☿.

Hab. Algeria.

101. FORMICA THORACICA.

Formica thoracica, *Fabr. Syst. Piez.* 397. 5 ♀.

Hab. Barbary.

This is probably a pale form of *F. ligniperda*.

102. FORMICA BICOLOR.

Formica bicolor, *Fabr. Ent. Syst.* ii. 351. 5 ♂; *Syst. Piez.* 398. 8.
Latr. Hist. Nat. Fourm. 123.
Lucas, Explo. Sc. Algér. iii. 302.

Hab. Barbary.

103. FORMICA SERICEA. — B.M.

Formica sericea, *Fabr. Ent. Syst. Supp.* 279. 9.
Latr. Hist. Nat. Fourm. 117. pl. 3. f. 17 ☿; *St. Farg. Hym.* 217. 24.
Lasius sericeus, *Fabr. Syst. Piez.* 416. 4.

Hab. Senegal.

104. FORMICA LONGICORNIS.

Formica longicornis, *Latr. Hist. Nat. Fourm.* 113 ☿.

Hab. Senegal.

105. FORMICA AURULENTA.

Formica aurulenta, *Latr. Hist. Nat. Fourm.* 114. pl. 3. f. 9 ☿.

Hab. Senegal.

106. FORMICA VIVIDA. B.M.

Worker. Length 3½ lines.—Jet-black, smooth and shining; head large, much wider than the thorax, deeply emarginate behind; the anterior margin of the clypeus slightly rounded and entire; the mandibles stout, strongly toothed within, and very obscurely ferruginous at their apex. Thorax rounded in front, compressed behind and obliquely truncate at the apex; legs wanting. Abdomen subglobose; the scale of the peduncle ovate, its upper margin entire; the head, thorax and abdomen thinly sprinkled with pale erect hairs.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

107. FORMICA RUBRIPES. B.M.

Formica rubripes, *Latr. Hist. Nat. Fourm.* 112 ☿.
Formica barbara, *Drury, Ill. Exot. Ins.* pl. 38. f. 3 ☿ (nec *Linn.*).

Hab. Africa (Sierra Leone).

108. FORMICA LABORIOSA. B.M.

Female. Length 5 lines.—Jet-black, smooth and shining; head oblong, a little wider than the thorax, slightly narrowed anteriorly; the flagellum obscurely rufo-testaceous; the anterior margin of the clypeus entire; the mandibles obscurely ferruginous. Thorax ovate; wings hyaline, the nervures pale rufo-testaceous. Abdomen ovate; the scale of the peduncle subovate, the superior margin rounded.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

This is probably the female of *F. vivida*.

109. FORMICA FŒTENS.

Formica fœtens, *Fabr. Ent. Syst.* ii. 354. 18.

Hab. Guinea.

This is probably a species of *Ponera*, closely allied to *Ponera Abyssinica* of Guérin.

110. FORMICA GUINEENSIS.

Formica Guineensis, *Fabr. Ent. Syst.* ii. 357. 31; *Syst. Piez.* 404. 37.
Latr. Hist. Nat. Fourm. 285.

Hab. Guinea.

111. FORMICA FULVO-PILOSA. B.M.

Formica fulvo-pilosa, *De Geer, Hist. Ins.* vii. 612. pl. 45. f. 13, 14.
Formica pilosa, *Oliv. Encycl. Méth.* vi. 498. 39.
Formica rufiventris, *Fabr. Syst. Piez.* 409. 57.

Hab. Cape of Good Hope.

112. FORMICA VESTITA. B.M.

Female. Length 5 lines.—Head and thorax rufo-fuscous; the head anteriorly, mandibles, antennæ, cheeks, legs, and sides of the thorax, ferruginous; the head, thorax and abdomen covered with a fine silky pale golden down, changing, in different lights, in brilliancy; the head rather narrower than the thorax; the ab-

domen large, ovate, and wider than the thorax; scale of the peduncle small, ovate, and slightly marginate above.

Hab. Port Natal.

113. FORMICA NATALENSIS. B.M.

Female. Length 7 lines.—Shining black, with the head above and the disk of the thorax opake. Head elongate; the clypeus carinated longitudinally; the mandibles obscurely ferruginous; the flagellum rufo-testaceous; the eyes placed rather high on the back of the head; a smooth impressed line runs from the anterior stemma to the base of the clypeus. The mesothorax with a deeply impressed line in the middle running backwards one-third of its length; a finer and more slightly impressed line runs on each side over the tegulæ; a few scattered punctures on the disk; the metathorax rounded behind; the apical joints of the tarsi ferruginous; the wings fusco-hyaline, palest towards their apex, the nervures testaceous, the stigma dark brown. Abdomen ovate; the apical margins of the segments narrowly pale testaceous; the scale of the peduncle subquadrate, and emarginate above.

Worker major. Length 6 lines.—Coloured like the female, only differing in having the mandibles black; head very large, much wider than the thorax and deeply excavated behind; thorax widest in front, narrowed behind and obliquely truncate at the apex; the scale of the peduncle narrower than in the female, its margin above entire.

Worker minor. Length 5 lines.—Coloured like the large worker, but having the mandibles ferruginous at the apex; slender and elongate; the head oblong-ovate, and slightly emarginate behind; the antennæ elongate and slender. Thorax elongate, narrower than the head, widest in front; the scale incrassate, narrow and subconical, its apex somewhat pointed. Abdomen ovate.

Male. Length 4½ lines.—In form resembling the male of *F. rufa*, in colour agreeing with the other sexes; the head narrower than the thorax, the legs slender and elongate, the tarsi pale rufo-testaceous; scale small, subconical, and slightly notched above. Abdomen elongate-ovate.

Hab. Port Natal.

Mr. R. W. Plant collected a number of each sex of this species from the nest, constructed in old decaying trees.

114. FORMICA CUSTODIENS. B.M.

Worker. Length 2 lines.—Head, thorax and legs ferruginous,

and covered with a silky cinereous pile. Head emarginate behind. The thorax deeply strangulated at the base of the metathorax; the scale of the peduncle narrow, incrassate, obtuse above. Abdomen ovate, black, and covered with grey silky pile.

Hab. Port Natal.

This species is attached by its mandibles to the leg of a species of *Pausus*.

115. FORMICA LACTEIPENNIS. B.M.

Female. Length 4½ lines.—The head, thorax and abdomen above brown-black, the two latter pale testaceous beneath; the flagellum, mandibles and legs testaceous; the tibiæ and tarsi rather darker than the femora; the head oblong, slightly emarginate behind; the metathorax testaceous, more or less dusky above; the scale of the peduncle pale testaceous, ovate, notched above; the wings milky-white, the nervures pale testaceous yellow; the abdomen ovate, its base and the apical margins of the segments pale testaceous; the insect is smooth and shining.

Worker major. Length 4½ lines.—Black: the flagellum and legs rufo-testaceous, the tarsi dusky; head very large, deeply emarginate behind; thorax narrow, widest in front, compressed behind; the diskal line of the thorax curved from the base to the apex; the scale pale testaceous and narrow, its margin entire; abdomen ovate, with the apical margins of the segments and the base beneath pale testaceous.

Worker minor. Length 4 lines.—Head elongate, much narrowed behind the eyes, the latter rather large and ovate; face anteriorly, the clypeus, palpi, flagellum, and extreme base and apex of the scape, pale ferruginous; the scape fusco-ferruginous. Thorax elongate, narrow, compressed behind, pale rufo-testaceous, with the disk of the thorax slightly fuscous. Abdomen ovate, the base and the scale of the peduncle pale rufo-testaceous; the scale incrassate, elongate, narrow, rounded above.

Male. Length 3 lines.—Head, antennæ, thorax, legs, and scale of the peduncle, pale rufo-testaceous; the head and abdomen small, the latter fuscous; the wings milky-white, the nervures yellow; the scale of the peduncle incrassate, quadrate, and deeply notched above.

Hab. Port Natal.

The sexes of this species were taken from the nest, which is usually constructed in fallen timber; collected by Mr. R. W. Plant.

116. FORMICA COSMICA. B.M.

Worker major. Length 3½ lines.—Black: the head and

thorax very thinly covered with sericeous down; the abdomen with a dense pale golden pubescence; the mandibles and flagellum ferruginous; the tarsi have their apical joints obscurely ferruginous. Head large, much wider than the thorax, emarginate behind; the clypeus with a central longitudinal carina, in a line with which a slightly impressed line runs upwards nearly to the emargination of the vertex. Thorax compressed posteriorly. Abdomen: all the segments with a narrow white apical margin.

Worker minor. Length 2¼ lines.—This differs in having the head much narrower and more elongate; the thorax is also more elongate; otherwise it resembles the large worker.

Hab. Port Natal. (Coll. R. W. Plant.)

117. FORMICA COGNATA. B.M.

Worker major. Length 5½ lines.—Extremely like *F. maculata*, which it may be: the antennæ and head as in that species; the legs entirely ferruginous; the abdomen entirely black; in other respects the same as in *F. maculata*.

Worker minor.—This insect differs from the small worker of *F. maculata*: the head is of a different form, being narrowed slightly behind the eyes, and is more sharply emarginate behind; the scale of the peduncle is more elongate and pointed at the apex; the abdomen entirely black, and the legs red. Notwithstanding the differences pointed out, this species will probably prove to be a variety of *F. maculata*.

Hab. Port Natal.

118. FORMICA BRULLEI. B.M.

Formica carinata, *Brullé, Hist. Nat. Il. Canar. Zool.* ii. 84. 1 ☿.

Hab. Canary Islands.

119. FORMICA FABRICATOR. B.M.

Female. Length 5½ lines.—Black, smooth and shining: the flagellum, legs, thorax at the sides, and beneath, the apex of the metathorax and the base of the thorax beneath, pale rufo-testaceous. Head subquadrate and emarginate behind; the clypeus subcarinate in the middle, above which in the centre between the antennæ is a slightly impressed line of the same length as the carina on each side of it; eyes ovate, placed rather high on the sides of the head. Thorax elongate-ovate. Abdomen ovate; the scale of the peduncle subovate and entire.

Worker major. Length 3½ lines.—Of a paler colour than the female; the head and the thorax above rufo-piceous; the legs,

thorax beneath, and the scale, pale; head large, much wider than the thorax or abdomen, the thorax much compressed behind; the scale narrow, elongate, and rounded above.

Worker minor. Length 2½ lines.—Differs from the large worker in having the head narrower and the thorax more elongate; it is also rather darker-coloured.

Hab. St. Helena.

120. FORMICA SERICATA.

Formica sericata, *Guér. Voy. Coq. Zool.* ii. 203; *Atlas, Ins.* pl. 8. f. 2, 2 A, 2 B, 2 C, 2 D ☿.

Hab. New Hebrides.

121. FORMICA ZONATA.

Formica zonata, *Guér. Voy. Coq. Zool.* ii. 205 ♀.

Hab. Port Praslin (New Ireland).

Species of Australia and Tasmania.

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal, and one discoidal cell. The scale of the peduncle vertical and compressed. Workers with distinct ocelli. (Sp. 122, 123.)

Note.—We have seen only two females belonging to this subdivision, from Australia.

122. FORMICA DETECTA. B.M.

Female. Length 6 lines.—Nigro-fuscous: the antennæ and legs ferruginous. Head fusco-ferruginous; the sides, beneath, the face anteriorly and the mandibles ferruginous; rather wider than the thorax, and emarginate behind, with an impressed line running from the anterior stemma to the base of the clypeus. Thorax ovate, thinly covered on the disk with short reddish-brown pubescence; wings subhyaline, yellowish along the anterior margin of the superior pair and towards their base; the nervures rufo-fuscous. Abdomen ovate, the apical margins of the segments rufo-piceous; covered with a fine grey silky pile; the scale of the peduncle subovate, compressed, with the margin entire.

Hab. Australia (Hunter River).

123. FORMICA MACROCEPHALA. B.M.

Formica macrocephala, *Erichs. Wiegm. Archiv* (1842), 229, 259 ♀.

Hab. Tasmania.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells; the discoidal cells obsolete. The ocelli usually obsolete in the workers. (Sp. 124–138.)

124. FORMICA? ERYTHROCEPHALA. B.M.

Formica erythrocephala, *Fabr. Ent. Syst.* ii. 351. 6.
Atta erythrocephala, *Fabr. Syst. Piez.* 423. 5.

Hab. New Holland.

The typical specimen of the species is in the Banksian Collection; it is a very slender, attenuated form of a worker ant; the head is a little wider than the prothorax, elongate, and of a blood-red colour; the antennæ red, with the scape obscurely so; the mandibles porrect and finely denticulate on their inner edge. Thorax elongate, narrowed towards the head; the legs elongate, slender, and with the knees and tarsi red. The abdomen small, ovate, and subpetiolate; the scale of the peduncle small, incrassate, rounded in front, and truncate behind.

125. FORMICA INTREPIDA. B.M.

Formica intrepida, *Kirby, Trans. Linn. Soc.* xii. 477 ♀.

This species is probably the large form of the worker, the *F. basalis* being the smaller form; this can only be decided by an examination of a community. *F. intrepida* has the head, the basal joint of the antennæ, and the abdomen black; the thorax, scale, and legs red; the scale is ovate and entire above; the extreme base of the scape is red; the inner margin of the mandibles is slightly rufo-piceous, and armed with six teeth; the length of the insect from the tip of the mandibles to the apex of the abdomen is 7 lines.

Hab. Australia.

126. FORMICA AGILIS. B.M.

Worker. Length 5 lines.—Head and abdomen black; antennæ, thorax and legs ferruginous. Head oblong, rounded behind; eyes ovate and prominent, placed backwards on the sides of the head; the clypeus with a central longitudinal carina,

its anterior margin, as well as that of the mandibles, ferruginous; the mandibles large, stout, triangular, and furnished with seven acute teeth within; antennæ long and slender. Thorax elongate, narrow, and forming anteriorly a short neck; the posterior portion compressed, the metathorax rounded behind; legs elongate and slender. Abdomen ovate; the scale incrassate and nodose; the abdomen thinly sprinkled with long pale pubescence; the head and thorax, legs and antennæ thinly covered with short pale pubescence.

Hab. New Holland.

127. FORMICA CONSECTATOR. B.M.

Female. Length 5 lines.—Black, smooth and shining. Head oblong, not wider than the thorax; the anterior margin of the clypeus entire; the mandibles strongly punctured, and ferruginous at their apex; the antennæ and legs pale rufo-testaceous. Thorax ovate. Abdomen ovate; the node of the peduncle sub-ovate, its superior margin entire.

Hab. Australia.

128. FORMICA NIGRICEPS. B.M.

Worker. Length 5¼ lines.—Pale ferruginous, with the head black, the face anteriorly and the mandibles ferruginous. The clypeus slightly produced, and widely emarginate, or rather, notched in front, its extreme anterior margin black; the antennæ ferruginous. Thorax rounded in front, and gradually narrowed and compressed towards the metathorax; the scale ovate, its margin rounded; the legs elongate. Abdomen ovate; the insect thinly sprinkled with erect ferruginous hairs.

Hab. Australia.

129. FORMICA SUFFUSA. B.M.

Female. Length 7 lines.—Black: the head obscurely ferruginous, the face darkest, the antennæ black; the thorax with the sides with ferruginous stains above, the scutellum and two longitudinal stripes on the mesothorax, ferruginous; the legs ferruginous; wings fusco-hyaline, the nervures light brown, with a stain running along their course. Abdomen ovate, thinly clothed with pale golden pubescence.

Hab. Australia.

From the close resemblance between this species and *F. piliventris*, it is probable that this is the female of that insect.

130. FORMICA TESTACEIPES. B.M.

Worker. Length 4 lines.—Shining black: the legs flavo-testaceous, the flagellum testaceous; the posterior angles of the head, two indistinct maculæ on the prothorax above, and also the disk of the metathorax, ferruginous. The head deeply emarginate behind, very smooth and shining; the anterior margin of the clypeus widely emarginate. Thorax smooth, anteriorly rounded, posteriorly compressed. Abdomen ovate; the scale of the peduncle ovate and notched above.

Hab. Australia (King George's Sound).

131. FORMICA PILIVENTRIS. B.M.

Worker. Length 5½ lines.—Very variable in colour: head obscurely black; thorax, legs and abdomen black, or with the head and the thorax obscurely red; sometimes black with only the legs red. Head large, much wider than the thorax, the mandibles with coarse longitudinal irregular striæ; the clypeus subcarinate; the head and thorax very delicately shagreened; the thorax rounded in front, much compressed behind, with the metathorax obliquely truncated. Abdomen obscurely cupreous and clothed with a short pale golden pubescence; the scale narrow, incrassate, narrowed to the upper margin, which is very faintly notched.

Hab. South Australia.

132. FORMICA AUROCINCTA. B.M.

Worker. Length 4½ lines.—Head, antennæ, thorax, legs and scale, ferruginous; abdomen black, the apical margins of the segments of a semi-transparent golden colour. Head wider than the thorax, subquadrate, the sides nearly parallel; mandibles black, stout, and furnished with five or six acute teeth; the clypeus blackish. Thorax rounded in front, narrowed posteriorly, and with a deep strangulation at the base of the metathorax; legs elongate. Abdomen ovate; the scale of the peduncle quadrate and incrassate, obtuse above.

Hab. Adelaide.

133. FORMICA EPHIPPIUM.

Worker. Length 3 lines.—Black: the pro- and mesothorax ferruginous above. Head oblong-quadrate, slightly narrowed towards the mouth; the eyes placed high on the sides of the head; the antennæ and mandibles ferruginous; the scape more or less

fuscous; the clypeus with a central longitudinal carina; the mandibles serrated on their inner edge, with one or two stouter teeth at the apex. Thorax rounded in front and narrowed behind, the metathorax sometimes slightly ferruginous; legs elongate, the apical joints of the tarsi ferruginous. Abdomen small, ovate, covered with short pale yellow silky pubescence, interspersed with longer pale hairs; the head and thorax have also some scattered pale hairs; the scale of the peduncle subovate.

Hab. Adelaide. (Coll. F. Smith.)

134. FORMICA NIGRO-ÆNEA. B.M.

Worker. Length 3½ lines.—Black, with a green tinge. Head large, wider than the thorax, emarginate behind; the clypeus subcarinate, its anterior margin slightly notched in the middle; mandibles obscurely ferruginous, punctured and strongly dentate within. Thorax short, rounded in front, much narrowed behind, terminating almost in a point at the verge of the truncation of the metathorax; the apical joints of the tarsi obscurely rufo-piceous. Abdomen ovate, thinly covered with fine silky pale yellow pubescence; the margins of the segments thinly fringed with pale glittering yellow hairs, a few hairs of the same colour sprinkled over the head and thorax; scale subovate, small, rounded above.

Hab. Melbourne.

135. FORMICA PURPUREA. B.M.

Worker. Length 4 lines.—Head, antennæ, thorax and legs, bright red with a faint purple or blue tint; sometimes with the thorax posteriorly and the legs dusky, the purple tint being more vivid; abdomen bright violet, with sometimes a coppery tinge. In form resembling *F. rufa*, but with the head more narrowed anteriorly; the eyes smaller and placed more forward on the head; the antennæ rather longer and more slender; the thorax with a deep strangulation between the meso- and metathorax; the scale of the peduncle small, narrow, with its upper margin rounded and blunt. Abdomen ovate; the legs thinly covered with short pubescence.

Hab. Melbourne.

136. FORMICA NIGRIVENTRIS.

Formica nigriventris, *Guér. Voy. Coq. Zool.* ii. 203. *Atlas*, pl. 8. f. 4, 4 *a*, ☿.

Hab. Australia (Port Jackson).

137. FORMICA PROCIDUA.

Formica procidua, *Erichs. Wiegm. Arch.* (1842) v. 230, 259.

Hab. Tasmania.

138. FORMICA CONSOBRINA. B.M.

Formica consobrina, *Erichs. Wiegm. Arch.* (1842) v. 258, 228 ☿.

Hab. Tasmania.

Erichson described the female only of this species; the worker differs considerably in form and slightly in colour. The head and the abdomen, except the basal segment, black, otherwise pale ferruginous; the flagellum is also ferruginous; the head large, wider than the thorax, the latter rounded in front and much compressed posteriorly.

Species of South America and the West Indian Islands.

SUBDIVISION 2.

Wings with one marginal and two submarginal cells, the discoidal cells obsolete. The scale of the peduncle usually inerassate, generally much more so than in the first subdivision, sometimes subquadrate, sometimes subnodose; ocelli usually wanting. (Sp. 139–176.)

No species belonging to the first subdivision have been received from South America.

139. FORMICA 6-GUTTATA. B.M.

Formica sexguttata, *Fabr. Ent. Syst.* ii. 354 ♀; *Syst. Piez.* 401. 21.

Hab. Brazil (Santarem); Island of St. Cruz.

The insect which appears to be the *F. 6-guttata*, was captured by Mr. H. W. Bates at Santarem in Brazil; we have seen others from different parts of South America; on comparing specimens of both females and workers, we are unable to point out any specific distinctions between this species and the *F. maculata* of Fabricius, the latter being from Africa, and of which there is a series of specimens in the Collection of the British Museum.

140. FORMICA NANA.

Worker. Length 2¼ lines.—Black: the mandibles and antennæ ferruginous, the abdomen covered with golden pubescence. Head: the anterior margin of the clypeus and the sides of the head anteriorly, ferruginous; the clypeus with a central longitudinal carina, the head thinly covered with golden pubescence.

Thorax rounded in front and narrowed posteriorly; the apical joints of the tarsi ferruginous, covered thinly with golden pubescence. Abdomen subovate, covered with short golden pubescence, and thinly sprinkled with long golden-coloured hairs; the node of the peduncle incrassate, narrow, oblong-quadrate, with the margin above rounded.

Hab. Brazil. (Coll. D. Swainson, Esq.)

141. FORMICA OBSCURA.

Female. Length 3 lines.—Black: with the legs, thorax, on the sides and beneath, the emargination of the metathorax and the peduncle, ferruginous. Head closely and strongly punctured, thinly covered with pale pubescence; the extreme base and apex of the scape and also the base of the flagellum, the clypeus anteriorly and the mandibles, ferruginous; the antennæ and mandibles pubescent. Thorax strongly punctured, oblong-ovate, with the metathorax abruptly truncated; wings fusco-hyaline, the anterior pair with one marginal, three submarginal and one discoidal cell. Abdomen smooth, shining, and thinly covered with cinereous pubescence.

Hab. Brazil. (Coll. D. Swainson, Esq.)

It will no doubt be necessary hereafter to create a new genus for the reception of this remarkable species: we know only one other *Formica* which has the wings similarly veined, and that insect is from Australia.

142. FORMICA VINOSA.

Worker. Length 4 lines.—Head and thorax red, claret-coloured, the legs and abdomen of a more obscure tint. Head much wider than the thorax, the prothorax rounded at the sides, the meso- and metathorax much narrower; legs elongate and slender; the node of the peduncle incrassate, rounded, thick and blunt above.

Hab. Brazil. (Coll. D. Swainson, Esq.)

143. FORMICA LUTOSA. B.M.

Worker. Length 2 lines.—Head and thorax of a reddish-yellow; the legs pale testaceous; abdomen of a dirty clay colour, with the margins of the segments more or less fuscous or black. Head large, much wider than the thorax, smooth and shining, or very obsoletely and delicately punctured, the anterior margin

of the clypeus entire. Thorax opake, and flattened above, compressed posteriorly. Abdomen ovate and shining; the scale of the peduncle subovate, pointed in the middle above.

Hab. Brazil (Villa Nova on the Amazons). (Coll. H. W. Bates.)

144. FORMICA DECORA.

Female. Length 3¼ lines.—Black: the abdomen with a cream-coloured spot on each side of the second and third segments at their base. Head a little wider than the thorax, oblong, subquadrate; eyes rather large, ovate; mandibles ferruginous; antennæ dark rufo-fuscous. Thorax narrow, elongate-ovate; wings wanting; the apex of the coxæ and trochanters pale testaceous yellow; the apical joints of the tarsi ferruginous. Abdomen elongate-ovate; the pale spots at the base of the second and third segments subtriangular, the apical margins of the segments thinly ciliated with glittering white hairs.

Hab. Brazil. (Coll. D. Swainson, Esq.)

145. FORMICA BLANDA. B.M.

Worker. Length 2–2½ lines.—The head anteriorly, the antennæ, thorax, legs, scale of the peduncle and base of the abdomen ferruginous, and thinly covered with a changeable silvery pile; the disk of the thorax and the head with a few scattered long pale hairs; the head wider than the thorax, the latter compressed posteriorly. Abdomen black, densely covered with pale golden pubescence, and sprinkled with long pale hairs; the scale of the peduncle incrassate, forming a small obtuse node.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

146. FORMICA RUFIPES. B.M.

Formica rufipes, *Fabr. Syst. Ent.* 391. 4; *Ent. Syst.* ii. 350. 4; *Syst. Piez.* 398. 7, and *Mus. Dom. Banks.* (☿ major).
Oliv. Encycl. Méth. vi. 491.
Latr. Hist. Nat. Fourm. 110.
St. Farg. Hym. i. 215. 20.

Hab. Brazil.

The typical specimen of this species in the Banksian Collection is the "*worker major*;" the small worker differs in size as well as form.

Worker major. Length 5½ lines.—Black: opake and thinly sprinkled with ferruginous hairs; head cordate, twice the width of the thorax, the mandibles armed with six stout teeth; the

thorax and head of equal length, the former rounded in front and much compressed behind; the legs ferruginous, the tips of the joints and the three basal joints of the tarsi dusky; the scale of the peduncle ovate; the abdomen ovate, with the margins of the segments rufo-testaceous.

Worker minor. Length 3 lines.—Resembles the larger worker in colour, but has the head proportionately more elongate and narrow; the scale is narrower; the colour of the flagellum differs in being more or less ferruginous, sometimes entirely dusky.

The female is of the same colour as the workers; the head is very little wider than the thorax, the latter being elongate-ovate; the scale is emarginate above; the legs are shorter and rather stouter.

147. FORMICA ATRICEPS. B.M.

Worker major. Length 5 lines.—Ochraceous, with the head black: in some examples the head and disk of the thorax are more or less fusco-ferruginous. Head very large, much wider than the thorax and deeply emarginate behind; the clypeus with a central longitudinal carina, its anterior margin broadly and deeply notched; the mandibles armed with five blunt teeth; the flagellum ferruginous. Thorax rounded in front, compressed and much narrowed behind. Abdomen ovate, narrower than the head; the scale ovate, rounded and somewhat narrowed above; the insect is sprinkled thinly with long erect ferruginous hairs.

Worker minor. Length 4 lines.—Of the same colour as the large worker, but with the head narrower and more elongate; the clypeus, mandibles and flagellum ferruginous; otherwise resembling the large worker.

Hab. Brazil (Para; Santarem; Rio).

A specimen from the collection of Mr. Swainson, probably the female of this species, is of the same colour as the worker: the thorax ovate, with a dark stain on the mesothorax in front and an elongate dark stripe on each side; the wings hyaline, the nervures yellow; the scale of the peduncle ovate, with a slight notch above; the knees, tarsi and apical segments of the abdomen fuscous.

148. FORMICA ARBOREA. B.M.

Worker. Length $3\frac{1}{2}$ lines.—Opake-black: head large, wider than the thorax, slightly emarginate behind; the scape ferruginous at the base; the clypeus subcarinate, its anterior margin rounded; the mandibles armed with five acute teeth. Thorax

oblong, slightly narrowed behind; the two apical joints of the tarsi ferruginous; the head and thorax thinly sprinkled with pale yellow hairs. Abdomen ovate, clothed with short glittering yellow hairs.

Hab. Brazil.

There are several specimens of this species in the Museum Collection: a label attached to one bears the inscription, "The Leaf Ant.—Island of Morajo, Brazil."

149. FORMICA EGREGIA.

Worker. Length 6¼ lines.—Opake-black. Head widest in front, narrowed to the eyes, from which it is narrowed again abruptly backwards; antennæ elongate, nearly as long as the insect. Thorax elongate, narrow; legs elongate. Abdomen subovate, acuminate at the apex, thinly sprinkled with erect black hairs; node of the peduncle incrassate, narrow, its margin rounded above.

Hab. Brazil. (Coll. D. Swainson, Esq.)

150. FORMICA ABRUPTA.

Worker. Length 3 lines. — Light reddish-brown, thinly sprinkled over with erect pale hairs. Head subovate, emarginate behind; eyes round, placed midway on the sides of the head; the mandibles with a number of small black teeth on their inner margin. Thorax elongate, narrowed and compressed behind; the metathorax elevated, then abruptly truncated at the apex, the truncation slightly curved inwardly; the metathorax above with its lateral margins raised, forming a sort of subdentate process at the verge of the truncation; legs elongate and pubescent. Abdomen ovate; the scale of the peduncle incrassate, rounded in front to fit into the curved truncation, and hollowed behind to receive the base of the abdomen.

Hab. Brazil. (Coll. F. Smith.)

151. FORMICA SOLITARIA. Pl. XIII. figs. 4, 5.

Worker. Length 4¼ lines.—Opake-black, with eight or nine of the apical joints of the antennæ of a palish yellow; the mandibles and claws of the tarsi rufo-piceous. Head very large, wider than the thorax or abdomen; eyes occupying the whole of the sides of the head, very convex and prominent; the clypeus very large, much produced and truncate at the apex, with a central longitudinal carina, and covered with a thin grey pile; mandibles large, stout, shining, and having their inner margin finely serrated; the head emarginate behind; the ocelli promi-

nent on the vertex. Thorax elongate, narrow and compressed behind; the divisions of the thorax not very strongly marked; legs elongate and slender; the tibiæ with a few fine scattered spines or hairs. Abdomen ovate, with a few pale hairs at the apex; the scale of the petiole incrassate, and, viewed sideways, wedge-shaped.

Female. Length 5 lines.—Very closely resembles the worker, differing only in the form of the thorax, which is of a more ovate form, as in the majority of species, and in having wings, the neuration of which is the same as in *F. ligniperda*; the antennæ are elongate and slender, as in the worker.

Hab. Brazil (Ega).

This is a very remarkable insect; for, independent of the enormously developed eyes and produced clypeus, the palpi are elongated to half the length of the thorax, the maxillary are six-, and the labial four-jointed. Mr. Bates says, "This curious solitary ant is never seen by more than one at a time, prowling about fallen leaves, &c. in the forest; I have never seen its Formicarium, and, from its solitary habits, have no clue to guide me in looking for it."

152. FORMICA MELANOCEPHALA.

Formica melanocephala, *Fabr. Ent. Syst.* ii. 353. 13.
Coq. Illustr. dec. 1. t. 6. f. 8.
Latr. Hist. Nat. Fourm. 269.
Lasius melanocephalus, *Fabr. Syst. Piez.* 417. 5.

Hab. Cayenne.

153. FORMICA PALLIPES.

Formica pallipes, *Fabr. Ent. Syst.* ii. 356. 28.
Latr. Hist. Nat. Fourm. 284.

Hab. Cayenne.

154. FORMICA SERICEIVENTRIS. B.M.

Formica sericeiventris, *Guér. Voy. de la Coq. Zool.* ii. 205 ☿.
Formica cuneata, *Perty, Del. An. Art.* p. 134. t. 27. 1 ☿.

Hab. Rio Janeiro (Constancia); Columbia; Brazil; Mexico.

The descriptions of Guérin and Perty are of the large form of the worker; the female is from 8 to 10 lines long, and differs from the worker major in having the thorax oblong-ovate and broader in proportion to the head; in having ocelli which are small and placed rather forward, the anterior ocellus being in a

line with the vertex of the eyes; the wings are subhyaline, their nervures ferruginous; the scale of the peduncle is subquadrate, its upper margin notched in the middle; on each side of the notch it is rounded, and the lateral angles are produced into short spines. We have seen, from the collection of Mr. Swainson, an ant which we suppose to be the small form of the worker; it differs from the large form in having the head narrower, the antennæ and mandibles, as well as the clypeus anteriorly and the apical joints of the tarsi, ferruginous; in other respects it closely resembles the large worker.

155. FORMICA SENEX. B.M.

Female. Length 4½ lines.—Opake-black: abdomen slightly shining, with an obscure æneous tinge; the mandibles, antennæ and legs ferruginous; the anterior margin of the head slightly ferruginous. Head, of the same width as the thorax, slightly excavated behind; the anterior margin of the clypeus entire; the apex of the flagellum dusky. Thorax ovate, the metathorax truncate; wings subhyaline, the nervures pale testaceous; the apical joints of the tarsi dusky; the head and thorax are delicately shagreened, have a few scattered shallow punctures, and are sprinkled with erect white hairs. Abdomen ovate; the node of the peduncle ovate, margin entire; the abdomen is thinly covered with short white hairs, the margins of the segments ciliated with longer ones.

Worker. Length 3 lines.—In colour agreeing with the female. Head wider than the thorax. The thorax short, slightly narrowed posteriorly; the metathorax quadrate above and truncate behind; the scale as in the female, and the insect sprinkled with white hairs as in that sex.

Hab. Rio (Constancia). (Coll. Rev. H. Clark.)

156. FORMICA AGRA. B.M.

Worker. Length 5½–6 lines.—Elongate, slender; very variable in colour, some specimens with the head black, and the thorax and abdomen dark brown, the legs being paler; other examples have the head fuscous, the thorax and abdomen being of a reddish-brown, the latter with the apex darker. Head widest, narrowing behind the eyes into a slender neck; the antennæ long and slender; the prothorax elongate, much narrowed anteriorly; the legs elongate and slender. Abdomen ovate; the scale of the peduncle incrassate and subconical; the apical margins of the segments of the abdomen pale testaceous.

Hab. Rio (Petropolis); Columbia. (Coll. Rev. H. Clark.)

This is one of those extraordinary forms which differ so widely from the generality of worker ants, that it might possibly constitute a new genus, or a distinct section; the male and female being unknown, it is retained in the genus *Formica*; in form it is very like *F. singularis*.

157. FORMICA BIDENS.

Formica bidens, *Linn. Syst. Nat.* i. 964. 13.
De Geer, Mém. Hist. Ins. iii. 600. t. 31. f. 1, 2.
Fabr. Spec. Ins. i. 492. 24; *Ent. Syst.* ii. 360. 42.
Oliv. Encycl. Méth. vi. 497. 36.
Atta bidens, *Fabr. Syst. Piez.* 422. 3.

Hab. Surinam.

158. FORMICA STIGMA.

Formica stigma, *Fabr. Syst. Piez.* 400. 18.

Hab. South America.

This is probably an *Odontomachus*; the black stigma is characteristic of all the species, and the exserted mandibles are equally constant in that genus.

159. FORMICA CONSPICUA. B.M.

Female. Length 5–5½ lines.—Chestnut-red: the head about the same width as the thorax, slightly excavated behind; the clypeus subcarinate in the middle, its anterior margin slightly but widely emarginate; mandibles strong, punctured, and armed with four or five teeth. Thorax ovate; wings subhyaline, the nervures pale testaceous. Abdomen ovate; the apical margins of the segments of a darker hue; the scale of the peduncle wide, ovate, with the margin entire.

Hab. Jamaica.

160. FORMICA SACCHARIVORA.

Formica saccharivora, *Linn. Syst. Nat.* i. 963. 10.
Fabr. Syst. Ent. 392. 10; *Ent. Syst.* ii. 356. 24.
Oliv. Encycl. Méth. vi. 495. 21.
Latr. Hist. Nat. Fourm. 280.
Lasius saccharivora, *Fabr. Syst. Piez.* 417. 9.

Hab. West India Islands.

161. FORMICA FEMORATA.

Formica femorata, *Fabr. Syst. Piez.* 397. 3 ♀.
St. Farg. Hym. i. 213. 15.

Hab. South America.

162. FORMICA RAPAX.

Formica rapax, *Fabr. Syst. Piez.* 398. 9.

Hab. South America.

163. FORMICA FLAVESCENS.

Formica flavescens, *Fabr. Ent. Syst.* ii. 353. 12; *Syst. Piez.* 399. 15.
Latr. Hist. Nat. Fourm. iii. pl. III. f. 15 ♀.
St. Farg. Hym. i. 217. 23.

Hab. South America; Cayenne.

164. FORMICA HARPAX.

Formica harpax, *Fabr. Syst. Piez.* 401. 23.

Hab. South America.

In all probability a male of the genus *Ponera*.

165. FORMICA PERDITOR.

Formica perditor, *Fabr. Syst. Piez.* 402. 25.

Hab. South America.

166. FORMICA DESTRUCTOR.

Formica destructor, *Fabr. Syst. Piez.* 402. 24.

Hab. South America.

167. FORMICA RUFICEPS.

Formica ruficeps, *Fabr. Syst. Piez.* 404. 32.

Hab. South America.

168. FORMICA APICALIS.

Lasius emarginatus, *Fabr. Syst. Piez.* 416. 2 ♀.

Hab. South America.

169. FORMICA EXULANS.

Lasius exulans, *Fabr. Syst. Piez.* 416. 3 ♀.

Hab. South America.

170. FORMICA PICIPES. B.M.

Formica picipes, *Oliv. Encycl. Méth.* vi. 501.
Latr. Hist. Nat. Fourm. 107. pl. iii. f. 16 ☿.

Hab. South America.

The insect which we suppose to be the female of this species, is from Santarem; it very closely resembles the *F. ligniperda*; the flagellum, legs, thorax beneath, pale ferruginous; in some specimens the metathorax is also pale, others have also the prothorax pale, and two pale longitudinal stripes on the disk of the thorax; the base of the abdomen is usually pale, as well as the basal segments beneath; the wings hyaline, with a yellow tinge at the anterior margin of the superior pair, the nervures pale ferruginous.

171. FORMICA BIMACULATA.

Worker. Length 2¼ lines.—Black and shining, with a transverse oblong white macula on each side of the second segment of the abdomen at its base, sometimes the maculæ form a slightly interrupted fascia; some of the large workers have the head red. Head oblong, with the mandibles and antennæ rufo-piceous; eyes rather large, prominent, and nearly circular. Thorax oblong, narrower than the head, compressed behind; the knees and the tarsi rufo-piceous. Abdomen ovate, with a few scattered glittering pale hairs; the scale of the peduncle incrassate, narrow, its margin above rounded; the legs and antennæ pubescent.

The large worker only differs in being half a line larger, and in having the head red.

Hab. St. Vincent's. (Coll. F. Smith.)

172. FORMICA ALBIPENNIS.

Formica albipennis, *Fabr. Ent. Syst.* ii. 354. 19.
Latr. Hist. Nat. Fourm. 278.
Lasius albipennis, *Fabr. Syst. Piez.* 417.

Hab. Island of St. Cruz.

173. FORMICA OVATICEPS.

Formica ovaticeps, *Spin. Faun. Chili*, vi. 238. 3.

Hab. Chili.

174. FORMICA MOROSA. B.M.

Worker. Length 3 lines.—Opake black: the flagellum ferruginous with the apex black. Head elongate, eyes ovate, placed rather high on the sides of the head; the mandibles ferruginous, the clypeus with a central longitudinal carina, the head rounded behind. Thorax not quite so wide as the head, much com-

pressed posteriorly; legs elongate, with the apical joints of the tarsi obscurely ferruginous. Abdomen elongate-ovate, the apical margins of the segments with a few glittering white hairs.

Hab. Chili.

175. FORMICA DISTINGUENDA.

Formica distinguenda, *Spin. Faun. Chili*, vi. 235. 1 ☿.

Hab. Chili.

176. FORMICA CHILENSIS.

Formica Chilensis, *Spin. Faun. Chili*, vi. 237. 2 ☿.

Hab. Chili.

177. FORMICA ATRIVENTRIS.

Formica nigriventris, *Spin. Faun. Chili*, vi. 239. 4 (nec *Guér.*).

Hab. Chili.

Species of North America.

SUBDIVISION 1.

Anterior wings with one marginal, two submarginal and one discoidal cell. The scale of the peduncle vertical and compressed. The ocelli present in the males and females, usually so in the workers.—Sp. 178-185.

The American species which belong to this division, as far as we have been able to ascertain, are all, except one species, common to Europe. Between the American and European specimens of the following species we can detect no specific distinctions: *Formica rufa* (Arctic America); *F. sanguinea* (Arctic America); *F. fusca* (Hudson's Bay); *F. umbrata*; *F. nigra* (Canada); *F. lateralis* (Hudson's Bay).

Of the second division, the *Formica pubescens* and *F. herculanea* of Europe are both widely distributed in America; the latter has been received from the United States, Nova Scotia, Canada, Hudson's Bay, and the Great Bear Lake in Arctic America. *Formica pubescens* has been received from the United States and also from Canada.

178. FORMICA RUFA.

Formica rufa, *Linn. Faun. Suec.* no. 1721.

Hab. Europe and North America.

179. FORMICA SANGUINEA. B.M.
Formica sanguinea, *Latr. Hist. Nat. Fourm.* 150.
Hab. Europe and North America.

180. FORMICA FUSCA. B.M.
Formica fusca, *Linn. Faun. Suec.* no. 1722.
Hab. Europe and North America.

181. FORMICA NIGRA. B.M.
Formica nigra, *Linn. Faun. Suec.* no. 1723.
Hab. Europe and North America.

182. FORMICA UMBRATA. B.M.
Formica umbrata, *Nyl. Addit. Mon. Form. Bor. Eur.* 1049.
Hab. Europe and North America.

183. FORMICA LATERALIS. B.M.
Formica lateralis, *Latr. Hist. Nat. Fourm.* 172.
Hab. Europe and North America.

184. FORMICA DISLOCATA.
Formica dislocata, *Say, Bost. Journ. Nat. Hist.* i. 288. 6.
Hab. North America (Indiana).

185. FORMICA INCISA. B.M.
Female. Length 4 lines.—Shining black: head elongate with the sides parallel, the vertex deeply notched; the anterior margin of the face ferruginous, the mandibles armed with five or six sharp teeth, the flagellum nigro-piceous. Thorax oblong-ovate; wings fusco-hyaline, the nervures black, the tarsi and knees ferruginous. Abdomen oblong-ovate, the margins of the segments narrowly testaceous; the scale incrassate, compressed, with the margin entire.
Hab. Mexico.

SUBDIVISION 2.

Anterior wings with one marginal and two submarginal cells. the discoidal cells obsolete.—Sp. 186–197.

186. FORMICA HERCULANEA. B.M.

Formica herculanea, *Linn. Faun. Suec.* 1720.
Formica castanea, *Latr. Hist. Nat. Fourm.* 118. pl. III. f. 12. A. ☿, D. ♀, C. ♂.
St. Farg. Hym. i. 215. 21.

Hab. North America.

The *F. castanea* appears to be the highly coloured form of *F. herculanea*: specimens from the United States are frequently highly coloured, some having the basal segment of the abdomen red; those from Arctic America are usually very dark coloured.

187. FORMICA FERRUGINEA. B.M.

Formica ferruginea, *Fabr. Ent. Syst. Suppl.* 279. 11; *Syst. Piez.* 399. 14.
Latr. Hist. Nat. Fourm. 94.

Hab. North America.

Extremely like the *F. ligniperda*, and apparently synonymous with the *F. castanea* of Latreille. A long series of the latter species exhibits a great variation in the colouring of different individuals: in some the first segment is red, in others it is merely red at the base; a few individuals have the head red; when this occurs, scarcely a trace of red is observable either on the metathorax or base of the abdomen. *F. ligniperda* has a close representative in most parts of the world: the *F. consobrina* of Erichson scarcely differs from the European species, but is found in Tasmania.

188. FORMICA PENNSYLVANICA.

Formica Pennsylvanica, *De Geer, Hist. Ins.* iii. 603. 4. pl. 31. f. 9, 10.
Oliv. Encycl. Méth. vi. 501. 52.
St. Farg. Hym. i. 213. 14.
Formica pubescens (var.), *Latr. Hist. Nat. Fourm.* 99.

Hab. Pennsylvania.

189. FORMICA TRIANGULARIS.

Formica triangularis, *Say, Bost. Journ. Nat. Hist.* 288. 5 ♀ ♂.

Hab. North America (Indiana).

190. FORMICA SUBSERICEA.

Formica subsericea, *Say, Bost. Journ. Nat. Hist.* i. 289. 7 ♀ ☿ ♂.

Hab. North America (Indiana).

191. FORMICA PALLIDE-FULVA.

Formica pallide-fulva, *Latr. Hist. Nat. Fourm.* 174 ☿.

Hab. United States.

192. FORMICA MELLEA. B.M.

Formica mellea, *Say, Bost. Journ. Nat. Hist.* i. 286. 1 ♂.

Hab. Louisiana.

193. FORMICA LAUTA.

Formica lauta, *Say, Bost. Journ. Nat. Hist.* i. 286. 2 ☿ ♂.

Hab. North America (Indiana).

194. FORMICA IMPARIS.

Formica imparis, *Say, Bost. Journ. Nat. Hist.* i. 287. 3 ☿ ♂.

Hab. North America (Indiana).

195. FORMICA INTEGRA. B.M.

Formica integra, *Nyl. Form. Fr. et d'Algér.* 62 (note).

Worker. Length 4½ lines. — Rufo-ferruginous: abdomen black; closely resembling the *F. sanguinea*, but the clypeus has not the small central notch which characterizes that species. Head large, much wider than the thorax, excavated behind; the clypeus subcarinated in the middle. Thorax narrowed posteriorly; the scale of the peduncle incrassate, its apex obtuse; head, thorax and abdomen thinly sprinkled with ferruginous hairs.

Hab. United States.

The insect described is doubtless the large form of the worker, and probably the same as that to which Dr. Nylander refers in his note: we have adopted the name which he proposed on that supposition. In the collection of the Museum are specimens from North America, agreeing in every respect with the *F. sanguinea* of Europe.

196. FORMICA ESURIENS. B.M.

Worker major. Length 4 lines.—Head, thorax, legs, and scale of the abdomen, ferruginous; abdomen nigro-fuscous. Head very large, much wider than the thorax, deeply excavated behind; the clypeus with a central longitudinal carina, its anterior margin with a broad shallow notch; the mandibles of a darker

colour than the head, the scape blackish, the flagellum red. The thorax paler than the head, narrowed behind; the apex of the metathorax oblique; the tibiæ and tarsi slightly fuscous. Abdomen ovate, the base more or less ferruginous; the entire insect thinly sprinkled with long erect ferruginous hairs; the scale compressed, narrow, its margin entire.

Worker minor. Length 3 lines.—Of the same colour as the larger worker; the head proportionably narrower, more elongate-quadrate; otherwise, the same as the larger form.

Hab. Mexico.

This species closely resembles *F. integra*, but is at once distinguished by the form of the scale of the peduncle.

197. FORMICA LÆVIGATA. B.M.

Female. Length 7 lines.—Black, smooth and shining; closely resembling *F. herculanea*, but differing in the form of the head, which is rather larger, and, viewed in front, much more square, the sides being parallel, not narrowest at the mouth; the head emarginate, wider than the thorax; the apex of the antennæ obscurely rufo-piceous. Thorax oblong-ovate; the tips of the joints of the legs and the apical joints of the tarsi ferruginous. Abdomen ovate, the scale ovate, the margin entire.

Worker. Length 5 lines.—Black: head of the same form as in the female, much wider than the thorax, the latter compressed behind; the legs nigro-piceous, the apical joints of the tarsi ferruginous. Abdomen ovate, the scale ovate, the margin entire; the apical margins of the segments testaceous.

Hab. California.

Genus 2. TAPINOMA.

Formica, pt., *Latr. Hist. Nat. Fourm.* 182 (1802).
Tapinoma, *Foerst. Hym. Stud.* 43 (1850).

Ocelli obliterated in the workers, present in the males and females; the scale of the petiole flattened, decumbent, usually received into an impressed fovea at the base of the abdomen; the thorax deeply impressed between the meso- and metathorax, the latter obliquely truncated; wings as in the second division of *Formica*.

1. TAPINOMA ERRATICA. Pl. III. fig. 6. B.M.

Formica erratica, *Latr. Hist. Nat. Fourm.* 182 ☿.
Nyl. Form. Fr. et d'Algér. 71.
Formica glabrella, *Nyl. Addit. Alt. Mon. Form. Bor.* 38.
Tapinoma collina, *Foerst. Hym. Stud. Form.* 43.
Schenck, Beschr. Nass. Ameis. 67.

Tapinoma erratica, *Smith, Brit. Form.* 111. 1.
(erraticum) *Mayr. Form. Austr.* 101. 1; *Ungar. Ameis.* 14. 1.

Hab. Britain; France; Germany; Helsingfors; Hungary; Madeira.

2. TAPINOMA ÆNESCENS.

Formica ænescens, *Nyl. Addit. Alt. Adno. Mon. Form. Bor.* 37.

Hab. South Russia.

3. TAPINOMA PYGMÆA. B.M.

Formica pygmæa, *Latr. Hist. Nat. Fourm.* 183.
St. Farg. Hym. i. 209. 10.
Nyl. Form. Fr. et d'Algér. 72. 33.
Tapinoma pygmæa, *Schenck, Beschr. Nass. Ameis.* 68.
(pygmæum) *Mayr. Form. Austr.* 103; *Ungar. Ameis.* 15. 2.

Hab. France; Germany; Hungary; Dalmatia; Italy; Madeira.

4. TAPINOMA GRACILESCENS. B.M.

Formica gracilescens, *Nyl. Form. Fr. et d'Algér.* 73.

Hab. Botanical Gardens at Kew and Paris; Madeira. (Coll. T. V. Wollaston, Esq.)

5. TAPINOMA NITENS.

Tapinoma nitens, *Mayr. Form. Austr.* 105. 3; *Ungar. Ameis.* 15. 3.

Hab. Austria; Dalmatia; Hungary.

6. TAPINOMA VIVIDULA.

Formica vividula, *Nyl. Adno. Mon. Form. Bor.* 900. 4.

Hab. Finland.

7. TAPINOMA GLABRATA. B.M.

Worker. Length 1½ line.—Black, slightly shining: antennæ, mandibles and tarsi pale ferruginous; scale of the abdomen oblong and depressed; abdomen oblong-ovate. The clypeus obscurely testaceous, the mandibles and flagellum rufo-testaceous, the apex of the latter slightly fuscous; the head, prothorax and coxæ beneath, rufo-testaceous; the thorax inclining from the prothorax to the base of the metathorax, the latter convex above, the tarsi pale rufo-testaceous. Abdomen ovate, the scale inclined forwards in a line with the oblique truncation of the metathorax; the insect entirely destitute of pubescence.

Hab. Malacca.

8. TAPINOMA SESSILIS. B.M.

Formica sessilis, *Say, Bost. Journ. Nat. Hist.* i. 287. 4 ♀ ☿.

Hab. United States.

Genus 3. HYPOCLINEA.

Formica, pt., *Linn. Mantiss.* i. 541.
Tapinoma, pt., *Schenck, Nass. Ameis.* 129 (1852).
Hypoclinea, *Foerst. Hym. Stud. Form.* (1850).

1. HYPOCLINEA QUADRIPUNCTATA. B.M.

Formica quadripunctata, *Linn. Mantiss.* i. 541.
Fabr. Syst. Ent. 392. 8; *Ent. Syst.* ii. 355. 22; *Syst. Piez.* 403. 28.
Oliv. Encycl. Méth. vi. 494. 19.
Latr. Hist. Nat. Fourm. 179. pl. VII. f. 37. A. ♀, B. ♀.
Losana, Form. Piem. 322.
Nyl. Form. Fr. et d'Algér. 73. 35.
Hypoclinea quadripunctata, *Foerst. Hym. Stud. Form.*
Mayr. Form. Austr. 107. 2; *Ungar. Ameis.* p. 15. 1.
Tapinoma quadripunctata, *Schenck, Beschr. Nass. Ameis.* 129.

Hab. France; Germany; Austria; Switzerland.

2. HYPOCLINEA FRAUENFELDI.

Hypoclinea Frauenfeldi, *Mayr. Form. Austr.* 106. 1.

Hab. Dalmatia.

Genus 4. POLYERGUS. Pl. IV. figs. 1-9.

Formica, pt., *Latr. Hist. Nat. Fourm.* p. 186 (1802).
Polyergus, *Latr. Hist. Nat. Ins. et Crust.* xiii. 256 (1805).

The maxillary palpi 4-jointed, the labial palpi 2-jointed. Mandibles slender and curved, acute at the apex, not dentate within.

POLYERGUS RUFESCENS. B.M.

Formica rufescens, *Latr. Hist. Nat. Fourm.* 186. pl. VII. f. 38 ♀.
Losana, Form. Piem. 324.
Formica testacea, *Fabr. Syst. Piez.* 400. 16 ☿ ?
Nyl. Form. Fr. et d'Algér. p. 75 (note).
Polyergus rufescens, *Latr. Hist. Nat. Ins. et Crust.* xiii. 256.
St. Farg. Hym. i. 198. 1.
Guér. et Perch. Gen. des Ins. t. 4. f. 1 ♂, 2 ♀.
Schenck, Beschr. Nass. Ameis. 70. 137.

Polyergus rufescens, *Mayr. Form. Austr.* 112. 1; *Ungar. Ameis.* p. 15. 1.
Nyl. Form. Fr. et d'Algér. 74. 1.
Hab. France; Switzerland; Germany; Austria.

This is the species whose interesting habits are detailed by Huber, and which is so well known as the Slave-making Ant. Like the *F. sanguinea*, it plunders the nests of various species, its communities being principally formed of the captives which it enslaves. It has not yet been found in this country, and appears to be rare even in the north of France; but in the south and also in Switzerland it does not appear to be uncommon.

Genus 5. POLYRHACHIS.

Formica, pt., *Fabr. Syst. Ent.* 394 (1775).

Maxillary palpi 6-jointed, elongate; labial palpi 4-jointed; mandibles stout, their inner edge denticulate. Ocelli obsolete in the workers. Thorax more or less armed with spines or hooks; scale of the peduncle incrassate, usually spinose, having two, three, or four spines. Wings with one marginal and two submarginal cells, the discoidal cells obsolete. Abdomen subglobose.

We are indebted to Mr. T. C. Jerdon for the first account of the habits of this genus of Ants; speaking of the *F. nidificans*, he says: "This Ant makes a small nest about half an inch, or rather more, in diameter, of some papyraceous material, which it fixes on a leaf. I have opened two, each of which contained one female and eight or ten workers. It is very rare, and I have only seen it in Malabar." Since the publication of these remarks, a nest of one of the species has been received from Malacca; it was discovered by Mr. Wallace, and exactly agrees with Mr. Jerdon's description. Pl. IV. figs. 10, 11.

Species of India, the Eastern Archipelago, China, and Philippine Islands. Sp. 1–44.

1. POLYRHACHIS BIHAMATA. Pl. IV. fig. 19. B.M.

Formica bihamata, *Drury, Ins.* ii. pl. 38. f. 7, 8 ☿.
Fabr. Syst. Ent. 394. 21; *Ent. Syst.* ii. 361. 49; *Syst. Piez.* 411. 66.
Sulz. Gesch. Ins. t. 27. f. 19.
Oliv. Encycl. Méth. vi. 499.
Latr. Hist. Nat. Fourm. 127.
Polyrhachis bihamatus, *Smith, Proc. Linn. Soc.* ii. 59.
Hab. India; Sumatra; Borneo.

The specimens received from Borneo are much smaller and of

a paler colour than those from India; there is also a slight difference in the form of the curved spines which arm the node of the abdomen, being parallel to each other full half of their length, whilst in examples from India the spines diverge from their base.

2. POLYRHACHIS HASTATA. Pl. IV. figs. 15, 16. B.M.

Formica hastata, *Latr. Hist. Nat. Fourm.* 129. pl. IV. f. 23 ☿.
St. Farg. Hym. i. 221. 29.
Jerdon, Madr. Journ. Lit. & Sc. (1851) p. 126, & *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Hab. India.

3. POLYRHACHIS SEXSPINOSA. B.M.

Formica sexspinosa, *Latr. Hist. Nat. Fourm.* 126. pl. IV. f. 21 ☿.
St. Farg. Hym. i. 219. 26.
Guérin, Voy. de la Coq. ii. 204. pl. 8. f. 3 ☿.
Jerdon, Madr. Journ. Lit. & Sc. (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Hab. India; Philippine Islands.

4. POLYRHACHIS RELUCENS. B.M.

Formica relucens, *Latr. Hist. Nat. Fourm.* 131.
St. Farg. Hym. i. 220. 27.
Jerdon, Madr. Journ. Lit. & Sc. (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.
Polyrhachis relucens, *Smith, Proc. Linn. Soc.* ii. 59. 2.

Hab. India; Borneo.

5. POLYRHACHIS RASTELLATA.

Formica rastellata, *Latr. Hist. Nat. Fourm.* 130 ☿.

Hab. India.

6. POLYRHACHIS NIDIFICANS.

Formica nidificans, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 125; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 108. 45.

Hab. India (Malabar).

7. POLYRHACHIS SYLVICOLA.

Formica sylvicola, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 126; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 108. 46.

Hab. India (in jungles).

8. POLYRHACHIS LACTEIPENNIS. Pl. IV. fig. 40. B.M.

Female. Length 3½ lines.—Opake-black, the wings milky-white. The clypeus emarginate in front, with a smooth shining line down the centre; a similar line runs upwards from the base of the clypeus, not quite extending to the anterior stemma. Thorax ovate, with the lateral angles of the prothorax acute; the metathorax armed at the lateral angles with a short stout acute tooth; the wings milky-white, the nervures pale testaceous, the stigma pale brown. Abdomen subglobose; the scale of the peduncle incrassate, subquadrate, with a long curved stout acute tooth at each superior lateral angle, the centre of the margin between the spines emarginate.

Hab. Northern India.

9. POLYRHACHIS PILIVENTRIS. Pl. IV. fig. 24. B.M.

Female. Length 3¼ lines.—Black: the head and thorax subrugose; abdomen smooth, shining, and covered with a fine cinereous pile. The mandibles triangular, with four or five sharp teeth on the inner edge which are rufo-piceous; the anterior margin of the clypeus rounded. Thorax oblong-ovate, the metathorax truncate; wings fulvo-hyaline, the nervures rufo-testaceous; the apical joints of the tarsi rufo-testaceous. The scale of the abdomen incrassate, subquadrate, with a stout spine at each of the superior angles, curving slightly inwards. Abdomen subglobose.

Hab. Singapore. (Coll. A. Wallace.)

10. POLYRHACHIS DIVES. Pl. IV. figs. 32, 33. B.M.

Worker. Length 2½ lines.—Black: clothed with pale golden pubescence; the thorax with two short curved spines in front, and two of about the same length on the metathorax; the sides of the thorax nearly parallel, very slightly widest in front; the scale of the abdomen compressed, square anteriorly, and furnished with two long spines curved backwards. The pubescence on the head and thorax obscurely golden; the legs without spines or pubescence, the calcaria pale testaceous.

Hab. Singapore.

11. POLYRHACHIS FLAVICORNIS.

Female. Length 3 lines.—Black: the head and thorax subopake; the abdomen shining and slightly fuscous. The flagellum, except the basal joint, reddish-yellow; the scape rufo-piceous. Thorax ovate; the legs rufo-piceous, the femora pale reddish-

yellow; wings subhyaline, nervures pale testaceous, stigma brown. Abdomen: the scale of the peduncle quadrate, armed with two short acute curved spines.

Worker. Length 2 lines.—Very like the female, but with the antennæ and legs of a deeper tint. The thorax with the sides flattened, the disk slightly convex, divided by two distinct sutures. The abdomen and scale as in the female.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

12. POLYRHACHIS HECTOR.

Worker. Length 4 lines.—Opake-black; delicately shagreened: the thorax armed with two long acute divergent spines in front, and two slightly divergent ones on the metathorax; the legs without spines or pubescence, the calcaria black; the disk of the thorax convex. Abdomen with an obscure ferruginous tinge; the scale of the petiole quadrate, with two long divergent spines above which curve backwards.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

13. POLYRHACHIS MODESTUS.

Female. Length 3 lines.—Black: the thorax ovate; the metathorax with two short blunt spines; the scale of the peduncle quadrate, armed above at the lateral angles with an acute spine which curves backwards. The head and thorax very delicately rugose; the flagellum rufo piceous at the apex beneath; the wings flavo-hyaline, the nervures pale testaceous; the apical joints of the tarsi obscurely ferruginous. The abdomen globose, smooth and shining.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

14. POLYRHACHIS CHALYBEUS. B.M.

Worker. Length 4 lines.—Black: the metathorax, legs and abdomen steel-blue; the head delicately rugulose; eyes ovate, lateral, placed high on the head; the antennæ inserted opposite the lower orbit of the eyes, each at the side of an elevated bent carina, the clypeus emarginate anteriorly, the mandibles large and stout, their apex denticulate. Thorax elongate, delicately transversely rugulose, with two stout acute spines in front, diverging outwards, and two shorter erect parallel ones on the metathorax; the femora and tibiæ compressed. Abdomen smooth and shining, the peduncle armed with two long stout diverging spines which are bent backwards.

Hab. Singapore. Malacca.

15. POLYRHACHIS DEFENSUS. Pl. IV. fig. 27. B.M.

Worker. Length 3½ lines.—Head and thorax black; abdomen opake rusty-red. Head and thorax coarsely shagreened, the latter armed with two long stout spines in front and two similar ones at the angles of the metathorax. Abdomen globose; the scale of the peduncle with two long stout spines diverging and curving backwards.

Hab. Singapore. Java.

Some specimens from Java have the abdomen black.

16. POLYRHACHIS LÆVIGATUS.

Worker. Length 2½ lines.—Black, smooth and shining: the antennæ with the flagellum thickened at the apex. Thorax: the anterior angles acute, the disk convex, the metathorax with two long, acute, divergent spines directed backwards; the coxæ and femora ferruginous, the anterior pairs obscure. Abdomen globose; the scale of the petiole with a long curved spine on each side, directed backwards to the curve of the abdomen.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

17. POLYRHACHIS TEXTOR. Pl. I. fig. 2. B.M.

Worker. Length 3½ lines.—Black: the head delicately rugulose; the eyes ovate, lateral, and placed high on the head; the front with two raised bent carinæ, at the sides of which the antennæ are inserted; the clypeus and the space between the antennæ rufo-piceous, the former with a slight longitudinal central carina; the mandibles obscurely rufo-piceous at their apex; the apical joint of the antennæ ferruginous. Thorax elongate, compressed at the sides and flattened above; the anterior portion longitudinally aciculate, the meso- and metathorax delicately rugulose; the prothorax with a short blunt tooth or spine on each side; the metathorax has also a minute tooth at the lateral superior angles; legs elongate, without spines or hairs, the tips of the claw-joints of the tarsi ferruginous. Abdomen smooth, highly polished; the scale of the peduncle with a single acute spine above, and a minute one on each side at its base.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

The nest of this species is figured in Pl. II. fig. 2.

18. POLYRHACHIS CARBONARIUS.

Worker. Length 2 lines.—Jet-black and shining: the head and thorax longitudinally aciculate above, the thorax most finely

so. The prothorax with a short acute spine at the lateral angles, the metathorax truncate, the truncation smooth and shining; the legs elongate, with acute spines or hairs, the calcaria pale testaceous; the anterior tibiæ obscurely ferruginous in front. Abdomen ovate, smooth and shining; the scale of the peduncle incrassate, narrowed to its superior margin, which is wide, arched, and without spines.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

19. POLYRHACHIS AFFINIS. B.M.

Worker. Length 2¼ lines.—Black: clothed with pale golden pubescence. Thorax: a very stout acute spine at each angle of the anterior margin of the thorax; the mesothorax convex above, the sides swollen; the metathorax with two divergent stout acute spines; the scale of the abdomen quadrate, with two long, rather slender spines above, which curve backwards over the abdomen; the legs without spines or pubescence, the calcaria pale testaceous.

Hab. Burmah.

This species is very like *P. dives* from Singapore, but differs principally in the form of the mesothorax.

20. POLYRHACHIS ABDOMINALIS. B.M.

Worker. Length 3½ lines.—Head, thorax and legs black; abdomen ferruginous. Head and thorax opake, very delicately shagreened, the sides of the thorax and the legs with a slight rusty-red appearance; the anterior margin of the clypeus rounded; the eyes pale reddish-brown. Thorax armed in front with two long straight spines, directed obliquely forwards; the pro- and metathorax slightly convex, not margined laterally above; the metathorax with the lateral margins raised, longitudinally concave above, and terminating on each side in a long, straight, slightly divergent spine, the spines obscurely ferruginous at the apex. Abdomen subglobose, the scale of the peduncle incrassate, and with two long acute curved spines above.

Hab. Burmah.

21. POLYRHACHIS TIBIALIS. B.M.

Worker. Length 2¼ lines.—Black: covered with a fine short slightly golden pubescent pile, the tibiæ and flagellum ferruginous. Head: the basal joints of the flagellum fusco-ferruginous. Thorax: a short stout spine at each of the anterior angles, and a much longer one at the posterior angles; the thorax is convex

above. The scale of the peduncle incrassate, quadrate, and with a long acute spine curving backwards and outwardly over the abdomen on each side. Abdomen globose, and having a much finer and brighter pile than the head and thorax.

Hab. Burmah.

Very like *P. dives*; the thorax is however shorter, broader, and much more convex above; the spines on the metathorax are also much longer.

22. POLYRHACHIS MUTATUS. Pl. IV. figs. 12, 13. B.M.

Worker. Length 3½ lines.—Opake-black: abdomen ferruginous; the thorax armed with two long, stout, acute spines in front; the metathorax with two long straight spines directed backwards; the sides of the metathorax flattened, above, slightly concave or channeled; the peduncle armed with two long curved spines; the insect entirely destitute of hair; the legs without spines and dark rufo-piceous.

Hab. Burmah.

23. POLYRHACHIS LÆVISSIMUS. Pl. IV. fig. 42. B.M.

Worker. Length 2¼ lines.—Black, smooth and shining, with the coxæ, femora and tibiæ ferruginous. Head large, wider than the thorax, the latter widest in front, gradually narrowed to the apex of the metathorax; the anterior margin of the thorax rounded, the lateral angles acute, the disk very convex, the metathorax oblique. The scale of the peduncle incrassate, subquadrate, the superior margin notched in the middle, the lateral angles produced and acute. Abdomen globose.

Hab. Burmah.

24. POLYRHACHIS FURCATUS. Pl. IV. fig. 20. B.M.

Worker. Length 2¼ lines.—Head and thorax black; abdomen and legs rufo-testaceous. Head smooth, shining and impunctate; the anterior margin of the clypeus rounded; the mandibles triangular, their inner margin denticulate; antennæ with the scape black, the flagellum rufo-testaceous, the basal joints fuscous. Thorax coarsely rugose, armed on each side anteriorly with a long, stout, slightly curved, acute spine; the metathorax with two long, stout, bent, slightly divergent, acute spines. Abdomen smooth, shining and subglobose, the peduncle with a sort of elevated pedestal, from the summit of which are produced two elongate spines, hooked and acute at their apex.

Hab. Burmah.

25. POLYRHACHIS BICOLOR. B.M.

Female. Length 3½ lines.—Head, thorax and scale of the abdomen black; antennæ, mandibles, palpi, legs and abdomen rufo-castaneous. Head covered with short cinereous pubescence; the frontal carinæ, at the sides of which the antennæ are inserted, much elevated; the eyes and ocelli reddish. Thorax ovate, and, as well as the scale of the peduncle, covered with short cinereous pubescence; the prothorax with a short acute spine on each side; there is also a similar spine on each side of the metathorax; the posterior tibiæ and tarsi fuscous. Abdomen globose, thinly covered with fine cinereous pile; the scale of the peduncle incrassate, quadrate, and with an acute spine at each of the superior angles, the spines straight and divergent.

Hab. Burmah.

26. POLYRHACHIS SUMATRENSIS. Pl. IV. fig. 43. B.M.

Female. Length 4¼ lines.—Head and thorax opake-black; abdomen slightly shining and pubescent. Head narrowed behind the eyes, which are ovate and prominent; in front of the eyes oblong-quadrate, with the anterior margin of the clypeus rounded. Thorax oblong-ovate, with the metathorax truncated, the verge of the truncation margined; the prothorax with an acute spine on each side; wings fusco-hyaline, the nervures testaceous, the stigma and costal nervure brown; the legs slightly pubescent. Abdomen subglobose; the scale of the peduncle incrassate, rounded in front and slightly convex behind; viewed in front somewhat quadrate, but widest above, the superior margin with the lateral angles produced into short acute teeth, the middle of the margin subdentate; there is also a short acute spine on each side beneath the lateral angles.

Hab. Sumatra.

27. POLYRHACHIS PANDARUS. Pl. IV. fig. 45. B.M.

Worker. Length 4 lines.—Black: head and thorax coarsely shagreened; the palpi pale testaceous; head below the antennæ finely shagreened; the posterior margin sharply recurved. Thorax not flattened above; two long, stout, acute, divergent spines in front, and two similar ones behind; the scale quadrate, with two long, acute, divergent spines directed backwards; legs without spines or hairs; the anterior tibiæ with their calcaria pale testaceous, those on the intermediate and posterior legs black. Abdomen smooth, opake-black.

Hab. Borneo (Sarawak).

Specimens from Singapore have the abdomen rusty-red.

28. POLYRHACHIS CUSPIDATUS.

Worker. Length 2 lines.—Black: the head subovate; the base of the scape, the apex of the flagellum and the tips of the mandibles ferruginous. Thorax slightly compressed, the prothorax with an elevation in the middle which terminates above in two divergent spines, there is also a similar elevation terminating in a spine on each side of the metathorax; the coxæ, femora and apical joints of the tarsi ferruginous. Abdomen ferruginous at the base, the scale of the peduncle quadrate, deeply notched above.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

29. POLYRHACHIS EQUINUS.

Worker. Length 3 lines.—Black and shining: the thorax flattened above, the metathorax and the scale of the petiole bispinose, the legs pale ferruginous. Head shining and delicately rugulose; the palpi pale testaceous. Thorax with the lateral margins acutely edged, the sides of the thorax delicately striated, the prothorax above slightly concave and horseshoe-shaped; the metathorax also slightly concave, with the posterior angles acute and elevated, the metathorax smooth and shining behind. Abdomen globose, smooth and shining; the scale of the peduncle elevated, with two stout teeth above, the sides oblique; the scale is narrowest at its base.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

30. POLYRHACHIS VINDEX. B.M.

Worker. Length 2½ lines.—Black, slightly shining: the thorax flattened above, with two acute spines in front. The head and thorax covered with shining hoary pile, the former longitudinally striated; the apex of the flagellum beneath and the palpi pale rufo-testaceous. The thorax delicately striated longitudinally, divided by two distinct sutures, the lateral margins raised and acute, the posterior angles of the metathorax produced into acute spines; the tibiæ and femora ferruginous, more or less fuscous at their apex. Abdomen globose, smooth and shining; the scale of the peduncle incrassate, narrowed to the superior margin, which is rounded, and terminates in a minute tooth laterally.

Hab. Borneo.

31. POLYRHACHIS RUPIPES. Pl. IV. fig. 28. B.M.

Worker. Length 2½ lines.—Black: the antennæ, cheeks, lower part of the face, and the legs, ferruginous; the face

with three elevated carinæ in the middle, the antennæ inserted at the sides of the two outer ones; the head rugose, the thorax very coarsely so; thorax not flattened above, armed with two long, stout, acute spines in front and behind; scale of the abdomen incrassate, armed above with two long, bent, divergent spines. Abdomen smooth and shining, the entire insect sprinkled with a few long pale hairs.

Hab. Borneo (Sarawak).

32. POLYRHACHIS CASTANEIVENTRIS. B.M.

Female. Length 3¼ lines.—Head and thorax black, and covered with fine grey pubescence; the antennæ and legs ferruginous; the mandibles and palpi ferruginous; the anterior coxæ black, the tarsi and posterior tibiæ fuscous; the thorax with two short acute spines in front, and two similar spines on the metathorax behind; the peduncle black, quadrate, armed with two divergent spines above.

Var. Thorax castaneous, with a downy cinereous pubescence.

Hab. Borneo (Sarawak).

33. POLYRHACHIS VILLIPES. Pl. IV. figs. 37, 38. B.M.

Worker. Length 3½–4 lines.—Black: the head and thorax longitudinally delicately aciculate; eyes ovate, very prominent, situated high on the sides of the head, the head narrowed posteriorly, the carinæ much elevated on the face, the palpi pale rufo-testaceous. Thorax armed in front with two long, acute, divergent spines, not armed posteriorly; the superior surface flattened, distinctly divided by two transverse sutures, and having a curved decline to the verge of the truncation of the metathorax; legs elongate, thinly covered with erect pubescence. Abdomen smooth and shining, sprinkled with erect black hairs; the peduncle, viewed in front, subquadrate, narrowed to the base, the superior lateral angles with long, stout, diverging, acute spines; there is also a minute spine at the side, a little beneath the elongate ones.

Hab. Borneo (Sarawak).

34. POLYRHACHIS NITIDUS. B.M.

Female. Length 4 lines.—Jet-black: smooth and shining; thorax ovate, the metathorax with two long acute spines; the peduncle quadrate, armed with two, long, curved, acute spines; the thorax rounded anteriorly; the truncation of the metathorax delicately transversely rugulose and shining; the anterior tibiæ rufo-piceous in front; wings subhyaline, faintly tinted with yel-

low; the nervures ferruginous, the stigma brown. Abdomen subglobose, very smooth and shining.

Hab. Borneo (Sarawak).

35. POLYRHACHIS RUFICORNIS.

Female. Length 4 lines.—Black: the antennæ, mandibles, legs, and base of the abdomen, ferruginous. Thorax elongate-ovate; wings subhyaline and iridescent, the nervures testaceous; the coxæ black. Abdomen globose, the scale of the peduncle with two stout, divergent spines above, which curve slightly backwards.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

36. POLYRHACHIS CONSTRUCTOR. Pl. IV. fig. 23.

Female. Length 4¼ lines.—Black: head and thorax opake; legs and abdomen shining. Thorax ovate, the prothorax slightly produced laterally, forming a small tubercle, the metathorax with two short, stout, erect teeth, or spines; wings subhyaline, the nervures rufo-testaceous. Abdomen: the node of the peduncle incrassate, with three short, stout, acute spines. Abdomen subglobose.

Hab. Sarawak. (Coll. W. W. Saunders, Esq.)

37. POLYRHACHIS INERMIS. Pl. IV. figs. 25, 26. B.M.

Worker. Length 2¼ lines.—Black: covered with a shining grey pile; the thorax armed at the angles of the anterior margin with short acute spines; the scale of the abdomen with its superior margin much wider than the basal one, and rounded, not spined. The thorax flattened above, its lateral margins acute, divided by two distinctly marked sutures; the head longitudinally striated, the abdomen subglobose.

Hab. Celebes.

38. POLYRHACHIS RIXOSUS. B.M.

Female. Length 4 lines.—Black: head and thorax longitudinally striated; abdomen shining and delicately rugose; the thorax armed in front with two stout spines; the scale of the peduncle with five spines on its superior margin, the three central spines short and acute, the lateral pair rather longer and also acute. The head and thorax slightly pubescent; the extreme apex of the flagellum pale ferruginous; the metathorax truncated, slightly concave; legs slightly pubescent, the claws pale

rufo-testaceous. Abdomen subglobose and delicately rugose, the extreme apex rufo-testaceous.

Hab. Celebes.

39. POLYRHACHIS VIGILANS. Pl. IV. fig. 39. B.M.

Female. Length 4½ lines.—Black: densely clothed with fine, short, silky, golden pubescence. Thorax: a short acute spine at each of the anterior angles; the posterior margin of the prothorax curved, the metathorax truncate; the legs with a thin silky pile, and sprinkled with long pale hairs. Abdomen subglobose; the scale incrassate, broad at the base and acute at its superior margin, which is widely emarginate above, the angles of the emargination acute, and a short tooth at the sides.

Hab. Hong Kong.

40. POLYRHACHIS TYRANNICUS. Pl. IV. fig. 29. B.M.

Worker. Length 3 lines.—Black: covered with a thin, silky, pale golden pile; the thorax flattened above and gradually arched to the apex of the metathorax, the lateral margins sharp and slightly recurved, the anterior angles armed with a stout acute tooth; the scale of the abdomen incrassate at the base, narrowed to the superior margin, which is transverse, and has an acute spine at each lateral angle, and a shorter acute one beneath at the side. Abdomen subglobose, the insect sprinkled with a few erect, pale hairs.

Hab. China.

This species may probably be the worker of *P. vigilans*, but the armature of the scale is too widely different to justify their being united.

41. POLYRHACHIS PHILIPPINENSIS. Pl. IV. fig. 34. B.M.

Worker. Length 5 lines.—Head and thorax opake-black; abdomen shining black. Antennæ elongate, as long as the body; head narrowed behind, eyes ovate and prominent, head before the eyes oblong-quadrate, with the clypeus rounded in front; palpi elongate, pale ferruginous. Thorax elongate; the pro-, meso- and metathorax divided by distinct sutures; the thorax flat above, the margins slightly raised, forming a sharp edge; the prothorax armed with two long, acute, stout, and slightly divergent spines; legs elongate, almost destitute of pubescence, having only a few short hairs on the tibiæ and tarsi. Abdomen nearly globular; scale of the peduncle incrassate; viewed in

front, it is oblong-quadrate, or slightly narrowed at the base, having at the lateral angles above a sharp acute spine.

Hab. Philippine Islands.

This species approaches nearest to *P. villipes*, from which it differs not only in having longer legs nearly destitute of hairs, but the form of the scale is very different.

42. POLYRHACHIS MALIGNUS. Pl. IV. fig. 44. B.M.

Female. Length 5½ lines.—Opake-black: the anterior margin of the clypeus notched in the middle. Thorax elongate-ovate, with an angular tooth or spine on each side of the prothorax; the metathorax has also a very stout spine at the lateral angles of its superior surface; the scale of the abdomen quadrate, with two very stout spines which curve backwards over the base of the abdomen; the mesothorax with an impressed abbreviated line in the middle anteriorly, the margins of which are smooth and shining; the wings subhyaline, their nervures rufo-testaceous, with the stigma darkest; legs without spines or hairs. Abdomen subglobose.

Hab. Philippine Islands.

43. POLYRHACHIS CYANIVENTRIS. Pl. IV. fig. 47. B.M.

Worker. Length 4 lines.—Head and thorax green, and with a cinereous pilosity; legs and antennæ black; the abdomen of a dark blue-green, entirely subopake. Head oblong, scarcely narrowed behind the eyes, the hinder margin transverse; the head and abdomen very finely longitudinally aciculate, the thorax rather coarsely so; antennæ not quite so long as the body. Thorax rather short, flattened at the sides and above, widest in front; the divisions of the pro-, meso- and metathorax distinctly marked, the metathorax abruptly truncated, the verge of the truncation margined; the prothorax with a stout acute spine at the anterior lateral angles; legs smooth, without spines or pubescence. Abdomen ovate; the scale of the peduncle very broad in front, slightly rounded, behind slightly concave, the superior margin nearly straight, its lateral angles with a short acute spine, which has a smaller one at its base outside.

Hab. Philippine Islands.

44. POLYRHACHIS ACICULATUS. Pl. IV. figs. 17, 18. B.M.

Worker. Length 2¼ lines.—Head and thorax obscurely purple, abdomen bright purple. Head and thorax above, longitudinally rugose; the mandibles short and stout, obliquely truncated at the apex, the truncation with four short teeth; the mandibles

longitudinally striated, their apex obscurely rufo-piceous; the head and scape of the antennæ sprinkled with longish black hairs. Thorax slightly convex above; the division between the meso- and metathorax marked by a deep suture, that between the pro- and mesothorax slightly marked; the thorax narrowed to the base of the metathorax, the lateral margins of the latter rounded, all the margins crenulated; the thorax and legs sprinkled with erect black hairs; the scale of the abdomen incrassate, prolonged laterally into an acute spine, the abdomen sprinkled with fine black, erect hairs.

Hab. Philippinè Islands.

Species of Africa.

45. POLYRHACHIS CARINATUS. Pl. IV. figs. 48, 49. B.M.

Formica carinata, *Fabr. Syst. Piez.* 413. 71.
St. Farg. Hym. i. 220. 28.
Jerdon, Madr. Journ. Lit. & Sc. (1851) 126; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Hab. New Caledonia; W. Africa; Port Natal.

This insect is very probably the worker of *P. militaris*; and possibly the *carinatus* of Fabricius may not be identical; in every particular it agrees with the description, but has in addition a short tooth at the base of the spines on the node of the peduncle; but this might very easily have been overlooked.

46. POLYRHACHIS VISCOSUS. Pl. IV. fig. 41. B.M.

Worker. Length 2¼ lines.—Opake-black: head and thorax finely rugose, abdomen delicately shagreened. The thorax with a short, stout, acute tooth at each of its anterior angles, and also a minute one at the posterior angles of the metathorax; the divisions of the parts of the thorax strongly marked, the disk slightly convex, with the lateral margins acute. The scale of the peduncle incrassate, subquadrate, with a long, acute spine at each of the superior angles, and two shorter ones between them. Abdomen subglobose.

Hab. Port Natal.

47. POLYRHACHIS GAGATES. Pl. IV. fig. 14. B.M.

Worker. Length 3¼–3½ lines.—Jet-black: head and thorax subopake; abdomen very smooth and shining. Head and thorax finely longitudinally rugose and thinly covered with fine, short, cinereous pile; the disk of the thorax flattened, the lateral mar-

gins acute; the prothorax with a stout acute spine on each side in front, the divisions of the thorax strongly marked; the posterior angles of the metathorax slightly produced, not spined. The scale of the peduncle incrassate, subquadrate, with a long, stout spine at each of its superior angles, and a short acute one outside beneath them; abdomen globose.

Hab. Port Natal.

48. POLYRHACHIS MILITARIS. Pl. III. fig. 5, & Pl. IV. fig. 36. B.M.

Formica militaris, *Fabr. Spec. Ins.* i. 493. 30 ♀; *Mant. Ins.* i. 310. 37; *Ent. Syst.* ii. 362. 50; *Syst. Piez.* 414. 73.
Oliv. Encycl. Méth. vi. 499. 46.
Latr. Hist. Nat. Fourm. 124. pl. IV. f. 22 ♀.

Hab. Africa (Guinea; Sierra Leone).

The type-specimen of this species is in the Banksian Collection; the insect is covered with a fine cinereous pile, the head and thorax are finely longitudinally rugulose, the spines on the prothorax are short, stout, and acute; the metathorax quadrate above, with the posterior and lateral margins carinated, the abdomen sprinkled with erect, pale hairs.

The male has the head and thorax coarsely rugose, the thorax more elongate than in the female, with two short acute spines in front and two longer ones on the metathorax; the petiole has only two spines, which are curved backwards over the base of the abdomen; the latter is elongate-ovate, and covered with fine, silky, cinereous pile.

The male is in the Collection of W. W. Saunders, Esq.

49. POLYRHACHIS LABORIOSUS. Pl. IV. figs. 21, 22. B.M.

Worker. Length 4 lines.—Black: the abdomen covered with fine, short, golden pubescence. The anterior margin of the clypeus rounded, and having a slight carina down the middle; the mandibles short, triangular, and armed with five acute, ferruginous teeth; the palpi dark fusco-ferruginous; the head is finely longitudinally rugose, and thinly covered with cinereous pubescence. Thorax armed in front with two long acute spines, above slightly concave, with the lateral margins forming a sharp raised carina, the disk with a little golden pubescence, which is frequently obliterated, the sides with a thin cinereous pubescence. Abdomen subglobose, the node of the peduncle with two long, erect, hooked spines directed backwards.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

50. Polyrhachis consimilis. Pl. IV. figs. 30, 31. B.M.

Worker. Length 4 lines.—Black: the abdomen covered with golden pubescence. Head and thorax opake, finely rugose. Thorax armed anteriorly with two stout, bent, acute spines; the metathorax with two long, slender, acute spines directed backwards; the divisions of the parts of the thorax strongly marked, the disk slightly convex, the lateral margins forming sharp carinæ. Abdomen subglobose, the scale of the peduncle incrassate, somewhat oblong, with two long, curved, acute spines directed backwards.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

This species resembles the *P. Ammon*, but differs in having longer spines in front of the thorax, and also in having the spines on the metathorax much longer and more slender.

51. Polyrhachis argentatus.

Formica argentata, *Fabr. Syst. Piez.* 413. 72.

Hab. New Caledonia; Africa.

Species of Australia and Tasmania. (Sp. 52–55.)

52. Polyrhachis Ammon. B.M.

Formica Ammon, *Fabr. Syst. Ent.* 394. 20 ♀; *& Cab. Mus. Dom. Banks.*; *Ent. Syst.* ii. 361. 48; *Syst. Piez.* 411. 65.
Oliv. Encycl. Méth. vi. 499. 44.
St. Farg. Hym. i. 221. 30.
Guérin, Voy. de la Coq. Zool. ii. 204.
Jerdon, Madr. Journ. Lit. & Sci. (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 109.

Hab. Australia.

53. Polyrhachis Latreillii.

Formica Ammon, *Latr. Hist. Nat. Fourm.* 132 (nec *Fabr.*).
Formica Latreillii, *Guér. Voy. Coq. Zool.* ii. 205.

Hab. Australia.

54. Polyrhachis femoratus. Pl. IV. fig. 46. B.M.

Worker. Length 4 lines.—Black: head and thorax opake, abdomen smooth and shining; the clypeus with a slight central carina; the extreme apex of the flagellum pale rufo-testaceous, the palpi ferruginous. Thorax compressed, slightly convex above, the lateral margins acute, distinctly divided into three portions by two transverse sutures, the anterior one curved; the

metathorax truncate, the truncation smooth and shining, the lateral angles of its verge recurved; the coxæ and femora ferruginous, the apex of the latter black. Abdomen: the scale subquadrate, and armed with four acute angular spines on its superior margin.

Hab. Australia (Melbourne).

55. POLYRHACHIS HEXACANTHUS.

Formica hexacantha, *Erichs. Wiegm. Archiv* (1842), 260. 231 ☿.

Hab. Tasmania.

Species of Brazil. (Sp. 56–58.)

56. POLYRHACHIS BISPINOSUS. Pl. XIII. fig. 1. B.M.

Formica bispinosa, *Oliv. Encycl. Méth.* vi. 502. 60.
Latr. Hist. Nat. Fourm. 133. pl. 4. f. 20 ☿.

Formica fungosa, *Fabr. Ent. Syst. Supp.* 281. 42; *Syst. Piez.* 410. 60.

Hab. Cayenne; Brazil (Santarem).

57. POLYRHACHIS SPINICOLLIS.

Formica spinicolle, *Latr. Voy. Humb. et Bonpl. Zool.* ii. 99. pl. 38. f. 6, 7 & 8–10.

Hab. Brazil (Rio Negro).

58. POLYRHACHIS RUGOSUS. B.M.

Worker. Length 5½ lines.—Black: the abdomen densely clothed with pale golden silky pubescence. Head elongate and coarsely rugose; eyes very prominent, placed backwards on the sides of the head; the head much narrowed behind the eyes, before the eyes it is slightly widened to the angles of the anterior margin, which is rounded; the mandibles large and triangular, finely denticulate on their inner margin; antennæ elongate and slender, the scape with a number of erect, long hairs. Thorax elongate, slender, and coarsely rugose; the prothorax narrowed anteriorly into a kind of neck, the mesothorax narrower than the pro- or metathorax, the latter elevated and furnished with two long, stout spines; legs elongate and having a number of erect, long hairs. Abdomen ovate; the node of the peduncle elongated, incrassate and slightly bent, widest at the base.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

Genus 6. DOLICHODERUS.

Formica, pt., *Fabr. Syst. Ent.* 394 (1804).
Dolichoderus, *Lund. Ann. des Sc. Nat.* xxiii. (1831).

1. DOLICHODERUS ATTELABOIDES. Pl. V. figs. 1, 2, 3. B.M.

Formica attelaboides, *Fabr. Syst. Ent.* 394. 19 ☿ ; *Ent. Syst.* ii. 360. 45 ; *Syst. Piez.* 410. 62.
Oliv. Encycl. Méth. vi. 498. 40.
Latr. Hist. Nat. Fourm. 288.
St. Farg. Hym. i. 222. 31.
Dolichoderus attelaboides, *Lund. Ann. des Sc. Nat.* xxiii. 130.

Hab. Brazil (Para; Santarem; Tejuca; Rio Janeiro).

All the sexes of this species have been received from Mr. Bates: figures are given of the male and female; the latter only differs from the worker in having the thorax more robust, and in being winged: the male is four lines and a half long, black, with the abdomen and legs smooth and shining, the head and thorax rugose as in the worker; the tarsi, articulations of the legs and apex of the antennæ testaceous; the head is triangular, prolonged behind into a neck, with the eyes larger and more prominent than in the other sexes; the abdomen is elongate-ovate.

2. DOLICHODERUS DECOLLATUS. B.M.

Female. Length 6 lines.—Head, antennæ, thorax, legs, and scale of the petiole, ferruginous; abdomen ovate, black, covered with a fine silky pile, the fourth and following segments ferruginous. Head elongate-ovate, coarsely rugose; the mandibles smooth and shining, with a few scattered punctures, the head not prolonged into a neck. Thorax rugose, the metathorax with two stout curved spines; the wings flavo-hyaline, the nervures pale rufo-testaceous.

Hab. Demerara. (Coll. F. Smith.)

This species is distinguished from *attelaboides* by not having the head prolonged into a neck; it is also a broader and more robust insect; the metathorax is rugose above, not transversely striated as in the other species.

The worker of this species is in the British Museum; it is also from Demerara; it differs from the worker of *attelaboides* in not having the head prolonged into a neck; it is, however, proportionately larger than in that species.

Family II. PONERIDÆ.

Ponerites, *St. Farg. Hym.* i. 185 (1836).
Poneridæ, *Smith, Cat. Brit. Hym.* p. 6 (1851).

The peduncle of the abdomen with a single node, the first segment more or less constricted. The females and workers armed with a sting. The pupæ enclosed in cocoons.

Genus 1. ODONTOMACHUS.

Formica, pt., *Linn. Syst. Nat.* i. 965 (1766).
Odontomachus, *Latr. Gen. Crust. et Ins.* iv. 128 (1804).

Species of Brazil. (Sp. 1–7.)

1. ODONTOMACHUS HÆMATODES. Pl. V. figs. 4–7. B.M.

Formica hematoda, *Linn. Syst. Nat.* i. 965. 17 ☿.
Fabr. Syst. Ent. 395. 26; *Ent. Syst.* ii. 364. 29.
Oliv. Encycl. Méth. vi. 502. 58.
Latr. Hist. Nat. Fourm. 192.
Formica maxillosa, *De Geer, Ins.* iii. 601. pl. 31. f. 3, 4, 5 ♀.
Oliv. Encycl. Méth. vi. 502. 59.
Formica unispinosa, *Fabr. Ent. Syst.* ii. 359. 39.
Myrmecia hæmatoda, *Fabr. Syst. Piez.* 425. 7.
Formica unispinosa, *Latr. Hist. Nat. Fourm.* 193 ☿.
Myrmecia unispinosa, *Fabr. Syst. Piez.* 423. 1.
Odontomachus hæmatodes, *Latr. Gen. Crust. et Ins.* iv. 128 ☿.
Odontomachus unispinosa, *Latr. Gen. Crust. et Ins.* iv. 128 ☿.

Hab. Brazil (Para, Villa Nova); Cayenne.

The sexes of this species have been received from Mr. H. W. Bates, who took them from the same nest; in a note on the species he says:—"Colonies of this insect are found beneath fallen leaves in the shade of trees; their communities consist of a few individuals, about thirty or forty, which scamper off with their pupæ on being disturbed." They vary in colour, some of the workers having the head, thorax and legs pale testaceous.

The male is about 3 lines in length, entirely of a pale ochraceous colour, the antennæ and legs being yellowish-white; the antennæ are nearly as long as the body, the wings clear hyaline, the nervures colourless, the stigma dark brown; the node of the abdomen is conical and blunt at the apex, the abdomen elongate-ovate, with the margins of the segments slightly depressed.

Mr. Bates says, "On turning over a rotten branch of a tree lying on the ground, I found a small colony of this species;

immediately on finding themselves disturbed, each seized a Termes-worker, of which there was a small colony in the same place, and walked off. I noticed that they took up the Termes very carefully, just in the same way as ants take up their own pupæ and larvæ when disturbed."

2. ODONTOMACHUS CHELIFERUS.

Formica chelifera, *Latr. Hist. Nat. Fourm.* 188 ☿. pl. 8. f. 51.
Ponera chelifera, *Latr. Gen. Crust. et Ins.* iv. 128.
St. Farg. & Serv. Encycl. Méth. x. 184. 1.

Hab. South America.

We are acquainted with two species of this genus, *O. affinis* and *O. maxillaris*, both of which agree in every respect with Latreille's *chelifera*, with the exception of the sculpture of the abdomen. Latreille describes the abdomen as having the skin (or surface) very finely striated; we are acquainted with twelve species of the genus, none of which have the slightest trace of striation on the abdomen. Is it not possible that there is an error in the description of *chelifera*, and that either *affinis* or *maxillaris* are identical with it?

3. ODONTOMACHUS AFFINIS. B.M.

Odontomachus affinis, *Guér. Icon. Règn. Anim.* iii. 426 ☿.

Hab. Brazil; Rio (Petropolis). (Coll. Rev. Hamlet Clark.)

4. ODONTOMACHUS MAXILLARIS. Pl. V. figs. 12–14. B.M.

Female. Length 7 lines.—Pale reddish-brown, irregularly stained with darker shades on the thorax; the head very smooth and shining, the mandibles two-thirds of the length of the head, abruptly curved at their apex and armed with three teeth, the inner one shortest; the inner edge of the mandibles serrated; on each side of the face a deep smooth longitudinal excavation, commencing at the base of the mandibles and terminating opposite the anterior ocellus; the space between the excavations longitudinally striated, the striation terminating at the posterior ocelli, from which a deep channel runs upwards to the extremity of the vertex; the antennæ as long as the head and thorax, slender and filiform. Thorax elongate-ovate; the pro- and metathorax transversely striated, the mesothorax longitudinally so; the coxæ and base of the femora pale. The scale smooth and spined at the apex; the abdomen smooth and shining, with the base and the apical margins of the segments dark brown, the whole sprinkled with a few long pale hairs.

Worker. Length 7 lines.—In colour resembling the female;

the head similarly sculptured; the prothorax forming a kind of neck, the meso- and metathorax elongate and straight, the sides being nearly parallel, the whole transversely striated; the legs paler than the thorax. The peduncle produced above into a sharp elongate spine, its base beneath also armed with a shorter spine; the abdomen as in the other sex.

Hab. Brazil (Ega and Villa Nova). (Coll. H. W. Bates.)

This species very closely resembles the *O. affinis* of Guérin, but the abdomen is black in that species, and no mention is made of the spine beneath the peduncle of the abdomen; in Guérin's species the mandibles are feebly denticulate, in this they are strongly so.

5. ODONTOMACHUS QUADRISPINOSUS. Pl.V.figs.15–17. B.M.

Worker. Length 4¼ lines.—Reddish-brown, with the coxæ and femora pale testaceous. The head of the same form and similarly sculptured to *O. maxillaris*; the mandibles two-thirds of the length of the head, abruptly bent inwards at their apex, which is armed with two long acute teeth, which have a third short tooth in the middle of their fork. The prothorax forming a neck; the meso- and metathorax elongate and narrow, transversely roughened, not regularly striated; the metathorax with two short spines on the verge of its truncation. The peduncle of the abdomen notched at its apex, forming two short spines. The abdomen with its apex pale testaceous, and having a few scattered long pale hairs.

Hab. Brazil.

6. ODONTOMACHUS HIRSUTIUSCULUS. B.M.

Worker. Length 3¼ lines.—Black: thinly sprinkled with griseous hairs; the mandibles, antennæ and legs pale ferruginous, the mandibles about half the length of the head, shining and finely denticulate on their inner edge; the head longer than broad, very finely and closely striated; the deep lateral channels on the face opposite the eyes smooth and shining, the head slightly narrowed posteriorly, the hinder margin emarginate; from the centre of the emargination an impressed line runs forwards and unites with the anterior channels: on each side the striation is oblique. Thorax: the prothorax with longitudinal striæ, which are straight in the centre and curved at the sides; the striation on the meso- and metathorax transverse; the scale of the peduncle conical, and terminating in a single spine at the summit; the abdomen elongate-ovate, smooth and shining.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

This species very closely resembles the *O. hæmatodes*, but independent of its smaller size, the head is of a different form; still it may possibly be a small form of that species, if such exist in the colonies of the insects of this genus, a circumstance which does not appear to have been observed.

7. ODONTOMACHUS? GHILIANII.

Odontomachus Ghilianii, *Spin. Mem. Accad. Torino*, xiii. 71 (1853).

Hab. Brazil (Para).

This is probably a species of *Formica*, notwithstanding its general resemblance to a species of *Odontomachus*; the abdomen and scale of the peduncle are described as being the same as in *Formica*; and no mention being made of the sting, which in *Odontomachus* is always more or less exserted, renders it highly probable that this is only one of the more remarkable and slender forms of a species of true *Formica*.

Species of Cuba.

8. ODONTOMACHUS INSULARIS.

Odontomachus insularis, *Guér. Icon. Règ. Anim.* iii. 423 ♂ ☿.

Hab. Cuba.

Species of Singapore, Ceylon, Ceram, and the Philippine Islands. (Sp. 9–13.)

9. ODONTOMACHUS RIXOSUS. B.M.

Worker. Length 4½ lines.—Head, antennæ and mandibles reddish-brown; the sulcations on the face obliquely striated behind, and smooth and shining towards the mouth; the elevation between the sulcations longitudinally striated, the hinder portion of the head smooth and shining, the central longitudinal impression not very profound. The thorax transversely striated, the prothorax circularly and delicately so, of an obscure reddish-brown; the coxæ and femora pale testaceous; the tibiæ and tarsi pale ferruginous. Abdomen reddish-brown, very smooth and shining, the base and apex paler; the node conical, terminating above in an acute point, and produced at the base beneath into an obtuse tooth.

Hab. Singapore.

10. ODONTOMACHUS RUGOSUS.

Worker. Length 3 lines.—Rufo-fuscous: the head, thorax, and nodes of the peduncle coarsely, deeply and longitudinally

striated; the mandibles and scape pale ferruginous, the flagellum pale testaceous; the mandibles very slender at their base, their inner edge finely serrated, their apex armed with two blunt teeth, which are abruptly curved at right angles with the jaws; the head rather longer than broad, deeply emarginate behind, the sides smooth and shining; the legs ferruginous. Abdomen smooth and shining dark rufo-piceous, with the apex pale.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

11. ODONTOMACHUS SIMILLIMUS. Pl. V. figs. 8, 9. B.M.

Female. Length 4½ lines.—Resembling *O. hæmatodes*, with the following differences: the mandibles more distinctly serrated, the sulcations on the sides of the face anteriorly, not so deeply impressed, or so smooth and shining, they also terminate before reaching the ocelli; the line running from the ocelli to the posterior margin of the vertex is not so deeply impressed; the most striking difference is to be found in the neuration of the wings; the discoidal cell is of a somewhat different form, and the externo-medial nervure is straight, and unites with the transverso-medial nervure at the basal angle of the discoidal cell; in other respects it scarcely differs from *O. hæmatodes*.

Hab. Fidjee Islands; Ceylon.

The difference pointed out in the neuration of the wings would appear to indicate a generic distinction; but an examination of a number of winged females shows a frequent approach to the neuration of the present species, and in specimens of the male of *hæmatodes*, taken with the female from the same nest, by Mr. Bates, the neuration is found to be identical with that of *O. simillimus*; in the British Museum are two specimens from Ceylon which appear to be identical with the present species.

12. ODONTOMACHUS SÆVISSIMUS. Pl. V. figs. 10, 11. B.M.

Worker. Length 7 lines.—Ferruginous: the mandibles of a deeper tint than the head, the mouth blackish; the deep excavations on the face as in the *O. infandus*, but the head behind smooth and shining; the central longitudinal channel very deeply impressed; the mandibles serrated and toothed at the apex. Thorax elongate, transversely striated, the prothorax very delicately so; the abdominal peduncle terminating in a long bent acute spine, and having a short blunt tooth at its base beneath; the legs pale ferruginous, with the tarsi dusky. Abdomen fusco-ferruginous, very smooth and shining.

Hab. Ceram. (Coll. Madame Ida Pfeiffer.)

13. ODONTOMACHUS INFANDUS. B.M.

Worker. Length 6 lines.—The head and thorax ferruginous, with a fine silky grey pile; the antennæ ferruginous; the legs pale testaceous, with the tarsi dusky. The mandibles serrated on their inner edge, the teeth increasing in size towards the apex of the jaws, which are suddenly bent at their extremity and armed with three teeth, the inner one shortest; the deep sulcations on the face between the eyes, smooth and shining, the hinder portion finely and obliquely striated; the head, behind the sulcation, striated on each side obliquely from the centre. The prothorax with fine curved longitudinal striæ, that on the meso- and metathorax transverse. The node of the abdomen terminating above in a long, slightly curved, acute spine, the base of the node with a blunt tooth beneath.

Hab. Philippine Islands. (Coll. H. Cuming.)

Notwithstanding the great similarity of all the species of this genus, and particularly between this and the *O. maxillaris*, the great difference in the serration of the mandibles will at once distinguish them.

Species of Australia.

14. ODONTOMACHUS RUFICEPS. B.M.

Worker. Length 5½ lines.—Head red; the thorax, legs and abdomen dark rufo-fuscous. The mandibles distinctly serrated on their inner edge, abruptly bent at their apex and armed with two stout blunt teeth, with a smaller tooth in the middle of their fork; the head delicately striated, the striæ longitudinal on the prominence which extends from the insertion of the antennæ to the junction of the lateral sulcations on the face; the vertex obliquely striated, as well as the anterior sulcations. Thorax striated, the striation of the prothorax having a circular direction; that on the meso- and metathorax transverse; the legs palest at the joints. The abdominal peduncle spined at the apex, as in *O. hæmatodes*, and striated transversely. The abdomen ovate, smooth and shining.

Hab. Australia.

Genus 2. DREPANOGNATHUS.

Harpegnathos, *Jerdon, Madr. Journ. Lit. & Sci.* 103 (1851) (nec *Wesm. Col.* 1834); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 100.

Head elongate; eyes lateral, large, ovate and placed forward on the head, touching the base of the mandibles; the mandibles one-third longer than the head, bent, and curving upwards; their

inner edge serrated, armed beneath, near their base, with a stout tooth; the antennæ placed forward on the head. Thorax twice the length of the head; the prothorax swollen at the sides, the sides of meso- and metathorax parallel. The peduncle incrassate; the apical margin of the first segment of the abdomen constricted.

1. DREPANOGNATHUS SALTATOR. Pl. V. figs. 18, 19.

Harpegnathos saltator, *Jerdon, Madr. Journ. Lit. & Sci.* (1851) 116; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 100.

"Worker: head long and granulated; jaws with a strong tooth near the base pointing downwards and inwards, and thence gradually tapering to the tip, and finely serrated, $\frac{1}{8}$ of an inch long; thorax barely grooved; abdominal pedicle small, low, ovate; abdomen very long; sting large; head and abdomen blackish-brown; thorax and legs rufous. Length $\frac{3}{4}$ of an inch.

"I have given it the name of *saltator* from its power of making most surprising jumps, which it does when alarmed or disturbed. It is very pugnacious, and bites and stings severely. It makes its nest underground, generally about the roots of some plant. Its society does not consist of many individuals. It appears to feed on insects, which it seizes alive."—(*Jerdon.*)

2. DREPANOGNATHUS CRUENTATUS. B.M.

Worker. Length 6½ lines.—Head, thorax and peduncle of the abdomen red; the antennæ, mandibles and legs pale rufo-testaceous. The head, thorax and abdominal peduncle coarsely granulated; the ocelli in triangle, approximate, placed about the middle of the head. The abdomen smooth and shining, about two-thirds of the length of the thorax; the first segment strongly punctured at the base, the following with a few scattered delicate punctures, the apical margins narrowly testaceous.

Hab. Hong Kong.

Mr. J. C. Bowring informs me that this species has the power of making surprising leaps,—a fact also mentioned by Jerdon in his description of the Indian species.

3. DREPANOGNATHUS VENATOR. B.M.

Worker. Length 6½ lines.—Exactly similar in form to *cruentatus*, but with the head, thorax and abdomen black; the legs and mandibles pale rufo-testaceous, the femora and tibiæ with dusky lines outside. Abdomen finely granulated and opake.

Hab. Madras.

This species very closely resembles *cruentatus*, but the joints

of the antennæ are much shorter, and the abdomen is granulated, the base being coarsely punctured. Whether either of the two species last described is the *saltator* of Jerdon it is impossible to determine satisfactorily; he says, "abdomen *very long*; sting large; head and abdomen blackish-brown; thorax and legs rufous." The abdomen in both of the new species is *short*.

Genus 3. PONERA.

Formica, pt., *Latr. Hist. Nat. Fourm.* 195 (1802).
Ponera, *Latr. Gen. Crust. et Ins.* iv. 128 (1804).

Maxillary palpi 2-jointed (in the European species): 4-jointed (in most exotic ones); the labial palpi 2-jointed; ocelli obsolete in the workers; eyes present in all the sexes (in the European species the workers are destitute of eyes). The scale of the petiole thickened, nodiform, the first segment of the abdomen more or less constricted. Females and workers furnished with a sting. Anterior wings with one marginal, two complete submarginal cells, and one discoidal cell.

Species of Europe. (Sp. 1-3.)

1. PONERA CONTRACTA. Pl. VI. figs. 9-12. B.M.

Formica contracta, *Latr. Hist. Nat. Fourm.* 195. t. 7. f. 40.
Fabr. Syst. Piez. 410. 58.
Ponera contracta, *Latr. Gen. Crust. et Ins.* iv. 128.
St. Farg. Hym. i. 195. 8.
Steph. Ill. Brit. Ent. Supp. 15. t. 42. f. 2.
Foerst. Hym. Stud. Form. 45.
Schenck, Nass. Ameis. 72.
Smith, Brit. Form. 113.
Mayr. Form. Austr. 116.
Nyland. Form. Fr. et Algér. 75. 1.

Hab. Europe; Madeira.

2. PONERA QUADRINOTATA.

Ponera quadrinotata, *Losana, Form. Piem.* 320.
Mayr. Form. Austr. 117 (note).
Nyland. Form. Fr. et d'Algér. 76 (note).

Hab. Europe.

3. PONERA OCHRACEA.

Ponera ochracea, *Mayr. Form. Austr.* 118.
Nyland. Form. Fr. et d'Algér. 76 (note).

Hab. Italy.

Species of India and East India Islands. (Sp. 4–25.)

4. PONERA SCULPTA.

Ponera sculpta, *Jerdon, Madr. Journ. Lit. & Sci.* p. 117 ☿ ; *Ann. & Mag. Nat. Hist.* xiii. 101 (1854).

Hab. Malabar.

Mr. Jerdon says this is one of the commonest species of Ant in Malabar, extending from the level of the sea up to the top of the Neilgherries. It lives in the ground in small societies, often making its nest in a flower-pot, occasionally under a large stone. It does not work in concert, being generally seen solitary. It lives on animal substances, but apparently will occasionally take vegetable substances.

5. PONERA STENOCHEILOS.

Ponera stenocheilos, *Jerdon, Madr. Journ. Lit. & Sci.* 118; *Ann. & Mag. Nat. Hist.* xiii. 101 (1854).

Hab. Malabar.

6. PONERA PROCESSIONALIS.

Ponera processionalis, *Jerdon, Madr. Journ. Lit. & Sci.* 118; *Ann. & Mag. Nat. Hist.* xiii. 102 (1854).

Hab. India.

Of this species Mr. Jerdon says, "I have met with this species over most of India. It lives in the ground in very numerous societies, and is most frequent in jungly districts; occasionally a vast column of them, 3 or 4 feet deep, may be seen crossing a road, and I have traced the column for forty and fifty yards. It stings very severely."

7. PONERA AFFINIS.

Ponera affinis, *Jerdon, Madr. Journ. Lit. & Sci.* 118; *Ann. & Mag. Nat. Hist.* xiii. 102 (1854).

Hab. Malabar.

8. PONERA PUMILA.

Ponera pumila, *Jerdon, Madr. Journ. Lit. & Sci.* 119; *Ann. & Mag. Nat. Hist.* xiii. 102 (1854).

Hab. Malabar.

9. PONERA SCALPRATA. Pl. VI. figs. 21, 22. B.M.

Length 6½ lines.—Black: the head longitudinally striated;

the thorax with circular striæ in front, on the disk it is longitudinal and oblique on the sides, curving upwards to the lateral margins of the truncation of the metathorax; the truncation oblique and transversely striated; the interstices of the striæ roughened, particularly on the head and thorax anteriorly; the antennæ reaching to the apical margin of the first segment of the abdomen. Abdomen oblong-ovate; the peduncle compressed, rounded in front, and armed above on the verge of the truncation with two acute spines pointing backwards; beneath, furnished with an acute spine in the middle; the truncation transversely striated; the apical margin of the first segment constricted, those of the following segments and the apex obscurely ferruginous.

Hab. Northern India.

10. PONERA IRIDIPENNIS. B.M.

Male. Length 3¼ lines.—Dark rufo-testaceous: the antennæ and mouth pale rufo-testaceous; the head smooth and shining, the ocelli very prominent. Thorax very smooth and shining; wings hyaline and beautifully iridescent, the nervures pale testaceous, the tegulæ, posterior margin of the prothorax, the base and apex of the femora, the tibiæ and the tarsi, pale rufo-testaceous. Abdomen elongate, slightly strangulated at the apex of the first segment; the apical margins of the three basal segments and the whole of the following segments pale rufo-testaceous; the node of the abdomen conical; the insect covered with a short thin downy pile.

Hab. North Bengal.

11. PONERA RETICULATA. B.M.

Male. Length 3½ lines.—Black: head transverse, eyes prominent, the mandibles and palpi pale rufo-testaceous; the antennæ obscurely fusco-ferruginous, the extreme apex pale testaceous. Thorax transversely reticulated; the pro- and metathorax rugose; the mesothorax with a smooth impressed line on each side over the tegulæ; the wings fusco-hyaline, the nervures and stigma testaceous; the tarsi ferruginous. Abdomen: the peduncle conical, the abdomen with a fine thin sericeous pile and sprinkled with long fuscous hairs.

Hab. Birmah.

12. PONERA PALLIDA. B.M.

Male. Length 3 lines.—Pale yellow testaceous: antennæ ferruginous, the tibiæ and tarsi slightly fuscous, the eyes ovate;

wings subhyaline and iridescent, the nervures rufo-testaceous; a deep constriction between the first and second segments of the abdomen, the node cylindrical, the apex obtuse.

Hab. Birmah.

13. PONERA RUBRA.

Female. Length 3½ lines.—Bright chestnut-red, smooth and impunctate: the head dusky before the ocelli; the mandibles serrated on their inner margin; the antennæ as long as the thorax, slightly thickened towards their apex. Thorax widest in front, the disk slightly fuscous; the metathorax obliquely truncate, the truncation smooth and shining; the anterior margin of the prothorax rounded. The node of the peduncle rounded in front and truncate behind. Abdomen elongate-ovate, pointed and pubescent at the apex.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

14. PONERA GEOMETRICA.

Worker. Length 5 lines.—Black, with more or less of a bronze tint: head, thorax and base of the abdomen striated, the striæ on the head longitudinal; the clypeus angulated in front; the mandibles ferruginous. Thorax rounded anteriorly, the disk with a number of transverse striæ in front, which are enclosed by circular striæ, beyond, the striation runs in an elongate-oval direction; the sides of the thorax obliquely striated; the legs obscurely ferruginous. Abdomen: the first segment with a beautiful even-curved striation; the node of the peduncle incrassate, rounded in front, truncate behind, the margin of the truncation deeply emarginate above, the lateral angles of the emargination produced into long stout acute spines; the node with a curved striation, the curve being forwards; the apical segments smooth and shining, covered with silky cinereous pubescence.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

15. PONERA TRANSVERSA. B.M.

Worker. Length 4 lines.—Black: the head deeply striated, the striæ on the vertex diverging from the centre; the antennæ scarcely as long as the thorax, inserted at the side of two ridges, forwards on the face at the base of the clypeus; the elevations, extreme base of the scape and the mandibles obscurely ferruginous. Thorax elongate, the sides straight, slightly narrowed from the front towards the abdomen; the margin of the thorax rounded in front, the lateral angles furnished with a short obtuse

spine, there are also two very short obtuse spines on the verge of the oblique truncation of the metathorax; the legs ferruginous. Abdomen obscurely rufo-piceous, covered with fine cinereous pile, and sprinkled with long pale hairs; the scale, viewed sideways, is wedge-shaped, the upper edge deeply notched, behind transversely striated.

Hab. Singapore.

16. PONERA PALLIPES. B.M.

Male. Length 4 lines.—Rufo-testaceous; the legs, antennæ, mandibles and palpi pale testaceous, tips of the joints pale ferruginous. Thorax roughly punctured, the metathorax and node of the abdomen rugose; the first segment of the abdomen subpetiolate, with a minute tubercle on each side. The wings hyaline, the nervures pale testaceous, the stigma brown. The abdomen smooth and shining.

Hab. Java.

17. PONERA VERSICOLOR. B.M.

Worker. Length 4½ lines.—Black, with purple, violet and green tints in different lights: the head deeply striated longitudinally, the striæ terminating at the base of the clypeus, the anterior margin of which is subangular; the mandibles obscurely ferruginous, their inner edge toothed, the teeth being alternately one large and one small, the mandibles finely striated; the eyes ovate, of moderate size, placed laterally about the middle of the head. Thorax in front with deep circular striæ, behind which are a few longitudinal ones on the disk; the posterior portion obliquely striated, the apex transversely so; the apical joints of the tarsi and the calcaria ferruginous. The node of the abdomen incrassate, rounded in front and above, and truncated behind, with two short sharp spines on the verge of the truncation, pointing backwards; the first segment with transverse curved striæ.

Hab. Philippine Islands; Sarawak.

In the 'Catalogue of Ants found in Southern India,' by Mr. T. C. Jerdon, a species, *Ponera sculpta*, is described as having the whole body curiously sculptured, being channelled and grooved in different directions; there are, however, three or four very distinct species, curiously sculptured, and the description of *P. sculpta* is too general to decide which, if any, of those in the Museum Collection are identical with that species.

18. PONERA APICALIS.

Female. Length 3¼ lines.—Black: the antennæ, mandibles, legs, and apex of the abdomen ferruginous; the head finely shagreened. Thorax oblong-ovate, finely longitudinally rugulose; the sides of the metathorax coarsely rugose, the truncation transversely striated; the node of the peduncle incrassate, rounded above, and transversely striated in front and behind; the abdomen shining, and with a fine thin grey pubescence.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

19. PONERA IRIDESCENS.

Worker. Length 2½ lines.—Rufo-fuscous, smooth and shining, with iridescent tints of blue; antennæ and legs, the apex of the metathorax, and the apical margins of the segments of the abdomen, ferruginous; the head with an abbreviated impressed line above the insertion of the antennæ; the mandibles with their inner margin serrated, and three larger teeth at their apex; the scale of the abdomen compressed, elevated and rounded above. Abdomen oblong, the apical margin of the first segment slightly constricted.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

20. PONERA RUGOSA. B.M.

Female. Length 3¼ lines.—Ferruginous; the head coarsely and deeply punctured, the punctures semi-confluent; the antennæ short and thick; the flagellum clavate and pubescent; the mandibles longitudinally grooved. Thorax oblong, widest in front, the anterior margin rounded, the lateral angles acute; the metathorax truncate; the prothorax with large deep confluent punctures; the mesothorax longitudinally grooved; the scutellum and metathorax ruggedly punctured. The abdomen longitudinally grooved, the grooves on the basal segment punctured; the node of the peduncle rugged and globose: beneath, furnished with a remarkable semitransparent flattened appendage.

Hab. Borneo (Sarawak).

21. PONERA INTRICATA. B.M.

Worker. Length 5 lines.—Black and shining: the mandibles, legs, and apex of the abdomen ferruginous; the flagellum obscurely ferruginous; the head evenly and deeply grooved, longitudinally so on the face, and transversely so on the vertex; the antennæ as long as the insect. Thorax: the dilated portion with transverse grooves on the disk, enclosed by curved ones;

the thorax beyond much compressed, with a central longitudinal groove above, the sides obliquely striated; the truncation of the apex oblique and transversely striated. The node of the abdomen compressed, rounded in front and above, and obliquely grooved; the margin of the truncation with two acute spines above, directed backwards. The basal segment of the abdomen with curved striæ, slightly impressed and obliterated at the sides; the apical margins of the segments rufo-piceous.

Hab. Borneo (Sarawak).

22. PONERA VIDUA.

Male. Length 4 lines.—Red-brown: antennæ elongate, fusco-ferruginous, the base and apex of the joints pale testaceous; eyes large and prominent, the ocelli large and of glassy brightness. Thorax elongate-ovate; the metathorax truncate, with the sides rugose; the wings hyaline, the nervures pale yellow, the stigma brown; legs pale testaceous. Abdomen smooth and shining, with a thin scattered pale pubescence, most dense towards the apex; a deep strangulation between the first and second segments; the node of the peduncle incrassate, coarsely rugose, rounded in front and truncate behind: beneath, furnished with two short teeth.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

23. PONERA DIMINUTA. B.M.

Worker. Length 3 lines.—Black: the mandibles and extreme base of the scape ferruginous, the flagellum fusco-ferruginous; the head elongate, narrowed behind; delicately striated, the striæ curved transversely on the vertex. Thorax elongate, produced anteriorly into a neck, behind which it is swollen: in the middle it is compressed, and from thence widened to the apex; the apex obliquely truncate, the truncation with a few deep transverse striæ; the thorax above has a number of short irregular striæ or scratches; the legs rufo-piceous, the tarsi palest. Abdomen: the scale or node, viewed laterally, is quadrate; above, it is slightly widest behind and truncated in front and behind; the first segment rounded in front, its apical margin constricted, the second segment is also constricted at the base; the abdomen is smooth and shining, with the apical margins of the segments and the apex rufo-piceous.

Hab. Borneo (Sarawak).

This species, on a smaller scale, is almost an exact representative of the *P. tarsata*.

24. PONERA POMPILOIDES. B.M.

Male. Length 3 lines.—Black: antennæ elongate and finely pubescent. Thorax elongate-ovate, obscurely ferruginous in front and behind; wings subhyaline, the nervures pale testaceous, the stigma brown; the apex of the coxæ and the base of the femora rufo-piceous; the apical joints of the tarsi pale ferruginous. Abdomen elongate, with a scattered pale downy pubescence; the apical margin of the first segment slightly constricted; the node of the peduncle conical and rufo-piceous.

Hab. Borneo (Sarawak).

25. PONERA LÆVICEPS.

Worker. Length 3 lines.—Black, smooth and shining: the head elongate, with a few striæ on each side of the clypeus; the latter triangular, with a central longitudinal raised carina; above the clypeus a central impressed line runs half way towards the posterior margin of the vertex. Thorax narrowed into a short neck in front, behind which it is swollen, thence it is compressed and narrowed to the apex, which is oblique and transversely rugose; the tarsi pale rufo-testaceous. Abdomen: a deep strangulation between the first and second segments; the node of the peduncle rounded and elevated.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

Species of Africa. (Sp. 26-35.)

26. PONERA GAGATES.

Ponera gagates, *Guér. Icon. Règ. Anim. Ins.* iii. 423 ☿.

Hab. Senegal.

27. PONERA ABYSSINICA.

Ponera Abyssinica, *Guér. Voy. en Abyss.* vi. 352. t. 7. f. 6.

Hab. Abyssinia.

28. PONERA DENTICULATA. Pl. VI. figs. 13, 14.

Female. Length 4½ lines.—Black: the head wider than the thorax, oblong-quadrate; the antennæ, mandibles, and margins of the carina between the antennæ, obscurely ferruginous; the anterior margin of the clypeus regularly denticulate; the mandibles with five long acute teeth; the head strongly longitudinally striated. Thorax above, deeply and transversely striated, the scutellum longitudinally, and the sides obliquely so; the anterior tarsi clothed beneath with golden-yellow pubescence; the tibiæ

and tarsi obscurely fusco-ferruginous; wings fusco-hyaline, the nervures testaceous. Abdomen ovate; the node of the peduncle compressed above, its superior margin rounded and deeply notched in the middle.

Hab. Cape of Good Hope. (Coll. Frederick Smith.)

29. PONERA ATTENUATA.

Worker. Length 3 lines. — Shining-black: narrow, elongate, smooth and impunctate. The antennæ fusco-ferruginous, palest towards their apex; the mandibles and face anteriorly rufo-testaceous. The tarsi and articulations of the legs rufo-testaceous; the thorax strangulated in the middle, compressed posteriorly. Abdomen strangulated between the first and second segments; the posterior margins of the segments rufo-testaceous.

Hab. Cape of Good Hope. (Coll. W. W. Saunders, Esq.)

30. PONERA ÆTHIOPICA. Pl. VI. figs. 19, 20. B.M.

Worker. Length 8 lines.—Black: the head and thorax opake, the abdomen shining; the mandibles ferruginous, with the base black, their apex acute, the inner margin not toothed. Thorax rounded and swollen in front, compressed behind; the anterior tarsi clothed with ferruginous pubescence beneath; the extreme apex of the femora and the tibiæ and tarsi obscurely rufo-piceous. Abdomen ovate, slightly constricted at the apex of the first segment; the node of the peduncle compressed, much elevated, rounded in front and truncate behind; the truncation slightly curved, the apex acute above; the extreme apex of the abdomen and the apical margins of two or three of the basal segments narrowly rufo-piceous.

Hab. South Africa.

31. PONERA CAFFRARIA. B.M.

Female. Length 4 lines.—Black: head rather wider than the thorax, oblong, with the eyes placed forwards on the sides, opposite to the insertion of the antennæ, behind emarginate, the posterior angles rounded; the mandibles and apex of the antennæ ferruginous. Thorax oblong-ovate, about the same length as the head, measuring to the tip of the mandibles; the wings fusco-hyaline, the nervures testaceous; the legs fusco-ferruginous, sometimes clear ferruginous. Abdomen ovate, about the same width as the head, the apex pale rufo-testaceous; the node of the peduncle compressed, the superior margin rounded; very similar to the scale of a *Formica*, being flattened, but broadest at the base.

Hab. Port Natal.

32. PONERA NITIDA. B.M.

Worker. Length 2 lines.—Black, smooth and shining: the extreme base and apex of the scape, and the flagellum, ferruginous. Thorax slightly swollen anteriorly, compressed in the middle, and slightly widened to the apex of the metathorax, which is obliquely truncated; the scale incrassate, rounded in front and truncate behind. Abdomen oblong, rounded at the base and pointed at the apex, slightly constricted between the first and second segments.

Hab. Port Natal.

33. PONERA PESTILENTIA. B.M.

Worker. Length 5½–6½ lines.—Black: the head longitudinally and finely striated; the mandibles large, shining, somewhat elongate, their inner edge serrated irregularly with minute and larger teeth, delicately striated, and with a few scattered punctures; the extreme apex of the antennæ rufo-piceous. Thorax: the pro- and mesothorax longitudinally striated, the striation on the former curved anteriorly; the metathorax transversely striated; the legs more or less obscurely ferruginous, nearly black, with the apical joints of the tarsi usually dark rufo-piceous, the calcaria pale rufo-testaceous, the anterior tarsi clothed with ferruginous pubescence beneath. Abdomen oblong; the first segment truncated at the base, narrower than the second segment and slightly strangulated at the apex; the first segment is pinched at the base beneath into a sharp carina and furnished with a short spine; the peduncle elevated, subcylindrical, and rounded or blunt at its apex above.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

34. PONERA SPINIVENTRIS. B.M.

Male. Length 6½ lines.—Black: with flavo-hyaline wings, the nervures rufo-piceous. Head much narrower than the thorax; the antennæ setaceous, longer than the thorax; head and thorax both covered with a thin downy pubescence; the calcaria and claw-joint of the tarsi testaceous. Abdomen elongate, longer than the head and thorax, the apical margins of the segments constricted; the basal segment with a short blunt tooth or spine at the base beneath; the node of the peduncle incrassate, obtuse above, and, as well as the abdomen, covered with a short downy pubescence.

Hab. Sierra Leone. (Coll. Rev. D. F. Morgan.)

In all probability this is the male of *P. pestilentia*.

35. PONERA MAXILLOSA. B.M.

Worker. Length 3 lines.—Black: antennæ, mandibles and legs ferruginous; sometimes the head and thorax fusco-ferruginous, others with the coxæ and scape of the antennæ fuscous; opake and subpunctate. Head subquadrate, wider than the thorax or abdomen; eyes ovate, placed before the middle on the sides of the head; mandibles elongate, curved, of nearly equal thickness throughout, not toothed. Thorax narrowed behind, the metathorax obliquely truncate and slightly concave. Abdomen strangulated between the first and second segments; the apical margins of the segments rufo-piceous; the terminal segment rufo-testaceous; the node of the peduncle incrassate, rounded above, elevated to the height of the first segment.

Male. Length $2\frac{3}{4}$ lines.—Black and slightly shining, finely punctured: eyes and ocelli very large, the latter glassy bright and very prominent; the legs and antennæ fusco-ferruginous; the antennæ towards their apex, the articulations of the legs, the tarsi, and tip of the abdomen, ferruginous; wings fusco-hyaline; abdomen and node of the peduncle as in the female.

Hab. Mauritius. (Coll. Dr. Beke.)

Species of Australia. (Sp. 36–39.)

36. PONERA AUSTRALIS. B.M.

Formica Australis, *Fabr. Syst. Ent.* 393. 16; *Ent. Syst.* ii. 359. 41; *Syst. Piez.* 410. 59.
Oliv. Encycl. Méth. vi. 497. 33.
Latr. Hist. Nat. Fourm. 128.

Hab. Australia.

37. PONERA RUGINODA. B.M.

Male. Length $4\frac{1}{2}$ lines.—Black: thinly covered with a loose silky cinereous pile; head and thorax roughly punctured; the mandibles ferruginous, more or less black at their base. Thorax: the metathorax rugose, the tibiæ and tarsi ferruginous; the wings hyaline, the nervures testaceous, the stigma fuscous. Abdomen: the node of the peduncle subovate and coarsely rugose; the first segment deeply strangulated, much narrower than the second; the apical margins of the third and following segments obscurely rufo-piceous.

Hab. Australia.

38. PONERA OCULATA. B.M.

Male. Length 5 lines.—Reddish-yellow: head black, with

the clypeus, mouth, and antennæ, reddish-yellow; the ocelli very large and projecting. Thorax oblong-ovate, with a loose, downy pubescence; wings hyaline, the nervures pale testaceous, the stigma fuscous. The scale incrassate, rounded in front and truncate behind. Abdomen oblong, with a strangulation between the first and second segments.

Hab. Australia (Macintyre River).

In the Museum Collection are two specimens of this insect; one has a short nervure emanating from the middle of the second transverso-medial nervure towards the apex of the wing; in other respects they exhibit no material difference.

39. PONERA METALLICA. Pl. VI. figs. 17, 18. B.M.

Female. Length 3½ lines.—Head, thorax and abdomen of various metallic colours; the head usually green behind the eyes, in front ferruginous, with a purple tint more or less obvious between those colours; the antennæ ferruginous; eyes ovate and prominent; the head deeply emarginate posteriorly; the head, thorax, and node of the abdomen rugose, being covered with large, deep, confluent punctures; the basal segment of the abdomen with transverse curved striæ. Thorax: the colour usually greenish; wings subhyaline, the nervures testaceous; the legs ferruginous. Abdomen purple, the apex ferruginous.

Worker. This sex only differs in having the thorax more compressed and elongate, and in having the abdomen frequently of a green tint.

Hab. Australia (Adelaide).

Species of South America. (Sp. 40–58.)

40. PONERA TARSATA. Pl. VI. figs. 15, 16.

Formica tarsata, *Fabr. Ent. Syst. Supp.* 280. 38 ☿; *Syst. Piez.* 408. 53.
Latr. Hist. Nat. Fourm. 200, pl. VII. f. 44. A. ☿, B ♀.
Halid. Trans. Linn. Soc. xvii. (1837).
Ponera tarsata, *St. Farg. Hym.* i. 194. 7.

Hab. South America; Demerara; Brazil; Para.

Fabricius appears to be in error in giving the habitat Senegal to this species in the Supplement to the 'Entomologia Systematica,' and it is repeated in the 'Systema Piezatorum.' I think there can be no doubt that the figure in Latreille's 'Fourmis' represents the South American species; and Fabricius quotes the figure as representing his *F. tarsata*. Be this as it may, the more minute description of Latreille is certainly that of the South American species.

41. PONERA GRANDIS. B.M.

Length 10 lines.—Black with a blue tinge: head subquadrate, eyes small; mandibles large, strongly dentate; thorax globose in front, compressed laterally in the middle; the node of the abdomen thick, compressed at the sides, rounded in front, and truncate posteriorly; the legs elongate, the anterior tarsi with rufescent pile beneath.

Ponera grandis, *Guér. Voy. Coq. Zool.* ii. 206 ♀.

Hab. Brazil.

42. PONERA FŒTIDA.

Formica fœtida, *Oliv. Encycl. Méth.* vi. 502.
Latr. Hist. Nat. Fourm. 206.
De Geer, Hist. des Ins. iii. 602. pl. 31. f. 6 ♀.

Hab. South America.

43. PONERA FLAVICORNIS.

Formica flavicornis, *Fabr. Ent. Syst. Supp.* 280. 38; *Syst. Piez.* 408. 52.
Latr. Hist. Nat. Fourm. 202. pl. VII. f. 43 ☿, f. 42. B ♀?
St. Farg. Hym. i. 190. 2.

Hab. Cayenne.

44. PONERA PILOSULA.

Worker. Length 2½ lines.—Obscure dark-red-brown, with the antennæ, mandibles, legs, margins of the segments of the abdomen and its apex, more or less ferruginous; the insect entirely covered with a fine silky pile, or bloom; the head, thorax, node and basal segment of the abdomen with scattered punctures; the thorax and node at their apex concavely truncate, the truncation smooth, the node oblong, rounded anteriorly.

Hab. Brazil. (Coll. F. Smith.)

A variety of this species is found, entirely pale ferruginous.

45. PONERA PILOSA. B.M.

Male. Length 7 lines.—Black: covered with a fine, thin, changeable, silky pile; anterior margin of the clypeus rounded; the palpi pale testaceous; antennæ three-fourths of the length of the body. Thorax: the disk slightly pubescent; the metathorax shining; wings fusco-hyaline; the tarsi rufo-testaceous. Abdomen elongate and cylindrical; the apical margin of the first segment constricted; the node incrassate, subquadrate, rounded above.

Hab. Brazil (Villa Nova).

46. PONERA PEDUNCULATA. Pl. VI. fig. 25. B.M.

Worker. Length 6½ lines.—Black: covered with a pale golden-yellow pubescence; the head rather wider than the thorax; the mandibles produced forwards, forming an elongated triangle, their inner edge serrated; the antennæ nearly as long as the thorax. Thorax: the disk somewhat flattened anteriorly, with the angles of the anterior margin acute; the meso- and metathorax pinched above, forming a central sharp edge down the middle above; the apex of the metathorax obliquely truncated; the calcar at the apex of the tibiæ pale testaceous. Abdomen: the node of the peduncle incrassate, its anterior margin vertical, from the apex of which it is gradually rounded behind to its base; a deep strangulation between the first and second segments, the apex of the abdomen acute.

Hab. Brazil. Rio (Constantia).

Specimens of this species have the golden pubescence usually more or less obliterated.

47. PONERA LINEARIS. B.M.

Worker. Length 2½ lines.—Black: smooth, shining, and thinly covered with a pale downy pile; the antennæ, mandibles and legs ferruginous, their apex acute, their inner margin not toothed or serrated; the clypeus triangular, the sides oblique, forming an acute edge down the middle. Thorax elongate, the sides nearly parallel, or very slightly swollen anteriorly; the apex of the metathorax obliquely truncate. Abdomen oblong-ovate, the apex pale rufo-testaceous, the node of the abdomen incrassate, rounded in front and truncate behind.

Male. Length 2 lines.—Obscure rufo-testaceous, or sometimes pale rufo-testaceous; the antennæ and legs pale testaceous; the thorax oblong-ovate; the wings hyaline, with the nervures pale testaceous-yellow; the abdomen and also the node of the peduncle of the same form as in the worker.

Hab. Brazil; Santarem.

The males and workers of this species were taken from the nest by Mr. H. W. Bates.

48. PONERA INVERSA. B.M.

Worker. Length 5 lines.—Black: the head longitudinally rugulose; the mandibles large, their inner edge with a row of sharp teeth. Thorax somewhat flattened anteriorly, closely and rather finely punctured, the lateral margins acute; the metathorax narrower and finely rugulose; the legs obscurely rufo-

piceous; the anterior tarsi densely clothed beneath with fulvous pubescence. Abdomen oblong subcylindrical, the base truncate; the node incrassate, anteriorly curving forwards over the metathorax, the upper surface nearly oval, shining and finely punctured.

Var. The legs and base of the abdomen castaneous.

Hab. South America (Napo).

49. PONERA CRUDELIS. Pl. VI. figs. 23, 24. B.M.

Worker. Length 3½ lines.—Black, elongate, smooth and shining: the mandibles, clypeus, antennæ and legs rufo-testaceous; apex of the abdomen pale rufo-testaceous. Head oblong-ovate; the clypeus with a sharp carina down the middle, the scape more or less fuscous above, the base and apex pale; the posterior margin of the head emarginate. Thorax elongate, narrowed or compressed in the middle, the apex emarginate, the lateral angles of the emargination acute or subspinose; the apical joints of the tarsi pale. Abdomen rounded at the base, strangulated at the apex of the first segment, and tapering to an acute point at the apex; the sting exserted, half the length of the abdomen; the node of the peduncle subquadrate, rounded in front and truncate behind; the insect thinly sprinkled with short pale hairs.

Hab. Brazil; Rio (Constancia).

50. PONERA CARBONARIA.

Worker. Length 4¼ lines.—Jet-black, shining and impunctate: mandibles obscurely ferruginous, with seven or eight strong teeth on their inner margin; the head, thorax and abdomen with a thin short yellowish pubescence; the tip of the antennæ ferruginous. Thorax elongate, narrowed posteriorly, the apex obliquely truncated; the calcaria and claw-joint of the tarsi rufo-testaceous. Abdomen: the node of the peduncle incrassate, vertical in front and obliquely curved behind; the extreme apex of the abdomen rufo-testaceous.

Hab. South America (Quito). (Coll. F. Smith.)

This species resembles *P. inversa*, particularly in the form of the node of the peduncle; but the latter species has the head striated, the thorax punctured, the prothorax flattened above, and the legs and base of the abdomen more or less ferruginous.

51. PONERA APICALIS. B.M.

Formica apicalis, *Latr. Hist. Nat. Fourm.* 204. pl. 7. f. 42. A.

Hab. South America; Brazil (Para).

52. PONERA LÆVIGATA. B.M.

Worker. Length 4 lines.—Jet-black, highly polished and impunctate: the tibiæ, tarsi, antennæ and mandibles ferruginous, the antennæ more or less dusky; the mandibles with seven or eight fine teeth, and very smooth and shining. Thorax elongate; the metathorax obliquely truncate, the sides finely striated. Abdomen: a deep strangulation between the first and second segments, the apex rufo-piceous; the node of the peduncle incrassate, elevated to the height of the first segment, and rounded above; the abdomen thinly sprinkled with pale hairs.

Hab. Brazil (Ega.) (Coll. H. W. Bates.)

53. PONERA PALLIPES. B.M.

Female. Length 6 lines.—Black: covered with a fine silky cinereous pile and scattered pale hairs; the mandibles ferruginous, the anterior margin of the face obscurely so; the antennæ dark rufo-piceous; the legs pale ferruginous; the wings flavo-hyaline, the nervures pale testaceous; the mandibles porrect, slightly curved downwards, with their inner margin serrated; the anterior margin of the face angular, with short striæ, particularly the central portion, the central point blunt. Abdomen elongate; a slight strangulation between the first and second segments; the node of the peduncle incrassate, rounded above, truncate before and behind.

Hab. Brazil (Para).

54. PONERA MORDAX. B.M.

Female. Length 4½ lines.—Black: the antennæ and legs fusco-ferruginous, the joints of the legs and the tarsi palest. Head longitudinally and strongly striated; the mandibles curved, of nearly equal width, their apex rounded, their inner margin denticulate; the clypeus slightly depressed in the middle, with the anterior margin slightly emarginate. Thorax ovate; the prothorax, mesothorax, and the base of the metathorax, striated longitudinally, the truncation of the latter transversely striated; the node of the abdomen transversely striated and subglobose; the first and second segments longitudinally and more finely striated than the head and thorax, the following segments smooth, shining and rufo-piceous.

Worker.—Rather smaller than the female, similarly sculptured except the second segment of the abdomen, which is only striated at the base, the apical half being smooth and shining.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

55. PONERA TORTUOLOSA.

Worker. Length 3 lines.—Black: the mandibles, antennæ and legs ferruginous. Head subquadrate, striated, the striæ running obliquely from the centre on each side, beneath, the striation runs in a transverse curve; eyes rather prominent. Thorax striated, the striæ running gradually obliquely inwards in front, and crossing in a transverse curve over the metathorax. The node of the peduncle incrassate, its anterior margin rounded, and the first two segments of the abdomen striated, the striation very regular and beautiful, describing two-thirds of a circle; the two basal segments longitudinally striated.

Hab. Brazil. (Coll. F. Smith.)

56. PONERA SULCATA. B.M

Worker. Length 3 lines.—Reddish-yellow, with the head black, the antennæ and mandibles pale testaceous-yellow, and semitransparent; the head and thorax longitudinally furrowed or striated, the node of the peduncle and the second segment of the abdomen are similarly striated; the first segment with the striæ curving inwards and uniting at the apex of the segment. The insect has a general semitransparent appearance, and in certain lights the furrows have a bright golden effulgence.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

57. PONERA ALIENA.

Worker. Length 1¼ line.—Scarcely differing from the *Ponera contracta* of Europe; the antennæ are however rather shorter, and the apical joint longer; the legs are shorter and thicker; but the most distinctive difference is the thickness of the scale, or node of the petiole, which in the present species is much thicker, particularly at its upper margin; in other respects they scarcely differ: the eyes are wanting, as in *P. contracta*: the palpi have not been examined.

Hab. Brazil. (Coll. W. Swainson.)

This species doubtless resembles very closely the *Ponera ruficornis* of Spinola, but he describes his insect as black, with red antennæ: our species is entirely of a brownish-yellow, and appears to be distinct.

58. PONERA RUFICORNIS.

Ponera ruficornis, *Spin. Mem. Accad. Torino*, xiii. 69. 51 (1853).

Hab. Brazil (Para).

This species is about the same size as the *Ponera contracta* of Europe, which it also closely resembles.

Species of Mexico.

59. PONERA FERRUGINEA. B.M.

Female. Length 2½ lines.—Ferruginous: the head scarcely wider than the thorax; the mandibles stout and strongly denticulate on their inner margin; the head slightly emarginate behind. Thorax oblong-ovate, the metathorax obliquely truncated, the truncation smooth and shining. The abdomen elongate-ovate; the node of the peduncle incrassate, its superior margin rounded, slightly convex in front and concave behind, the concavity smooth and shining.

Hab. Mexico.

60. PONERA BICOLOR.

Ponera bicolor, *Guér. Icon. Règ. Anim. Ins.* iii. 424.

Hab. Mexico.

Genus 4. PARAPONERA. Pl. VII. figs. 7, 8, 9.

Head subquadrate, with the angles rounded, slightly narrowed posteriorly; the eyes circular and very prominent, situated a little before the middle, at the sides of the head; the antennæ inserted forward on the face in deep cavities close to the base of the clypeus; mandibles large, triangular, dentate on their inner edge; the *labial palpi* 3-*jointed*, the *maxillary palpi* 5-*jointed*; the node of the abdomen incrassate; the abdomen with a deep strangulation between the first and second segments.

This insect, which is now separated from the genus *Ponera*, will not range in any of the subdivisions here described; in the prominence of the eyes it agrees with the genus *Ectatomma*, but the labial and maxillary palpi are composed of a different number of joints.

1. PARAPONERA CLAVATA. Pl. VII. fig. 6. B.M.

Formica clavata, *Fabr. Syst. Ent.* 394. 18 ☿; *Ent. Syst.* ii. 360. 44; *Syst. Piez.* 410. 61.
Formica armata, *Oliv. Encycl. Méth.* vi. 498. 42.
Formica spininoda, *Latr. Hist. Nat. Fourm.* 207 ♀ ☿.
Ponera tarsalis, *Perty, Del. An. Art.* 135. t. xxxvii. f. 2 ♀.
Ponera clavata, *Erichs. Faun. et Flo. Brit. Guiana*, iii. 592.

Hab. South America (Napo); Brazil (Para).

The male of this species resembles the female in the form of the abdomen and node of the peduncle, they are, however, smoother and more highly polished; all the specimens which I have examined are of a paler colour, being more or less obscurely ferruginous; the head narrower than the thorax, the eyes large and prominent, and the antennæ three-fourths of the length of the body.

Genus 5. PLECTROCTENA.

Head subquadrate; antennæ shorter than the head and thorax; the flagellum clavate, inserted very forward on the face near its anterior margin on each side of a central protuberance, which is advanced over and conceals the clypeus; the anterior margin of the latter widely emarginate; eyes small and ovate, not prominent, situated very forward on the sides of the head near the base of the mandibles; mandibles elongate, very slightly bent and crossing each other, their inner margin with a blunt tooth towards their base; the labial palpi 4-jointed; the maxillary palpi 3-jointed. Thorax oblong; the calcar at the apex of all the tibiæ, pectinate within. Abdomen oblong, with a deep strangulation between the first and second segments; the node subglobose.

This subgenus of *Ponera* differs in such remarkable peculiarities, and will not assimilate with any divisional group yet proposed, that it must stand isolated for the present: the form of the mandibles appears to indicate some peculiar economy; the small advanced eyes are also remarkable: the characters, being drawn from a worker ant, will doubtless require hereafter some additions and modifications. The beautiful pectination of the tibial spurs is common to several of the *Poneridæ*, but is sometimes only to be observed on the anterior legs, as in *Ectatomma*.

1. PLECTROCTENA MANDIBULARIS. Pl. VII. figs. 1–5. B.M.

Worker. Length 5–7 lines.—Shining black: delicately and not very closely punctured; an impressed line runs upwards from the anterior margin of the elevation between the antennæ, halfway towards the vertex; the mandibles grooved longitudinally. Thorax oblong, rounded in front, slightly narrowed and obliquely truncated posteriorly, finely punctured, and the sides delicately striated; the tarsi with a fulvous pubescence, the anterior pair densely pubescent beneath. Abdomen: the first segment finely punctured, the node of the peduncle incrassate, subglobose and finely punctured.

Male.. Length 4 lines.—Black: the apex of the abdomen ferruginous; head narrower than the thorax, transverse. with the

vertex slightly narrowed behind the eyes; shining and delicately punctured; the antennæ inserted in front of two elevated processes, the clypeus widely emarginate; mandibles short, not toothed and blunt at their apex. Thorax rugose, the disk with a mixture of confluent punctures and striæ; the mesothorax with two deeply impressed oblique channels running inwards and uniting at the base of the scutellum; the wings subhyaline and iridescent, the nervures testaceous, the stigma fuscous. Abdomen: the three apical segments ferruginous, of the same form as in the female; the node of the petiole also similar. The worker not known.

Hab. Port Natal.

The sexes, taken *in coitu* by Herr Gueinzius, have been received from Port Natal; he says, "solitary; I have not been able to find its nest."

Genus 6. ECTATOMMA.

Head subquadrate; antennæ inserted forwards on the face at the base of the clypeus, 12-jointed in the female, 13-jointed in the male; eyes ovate and very prominent, placed a little behind the middle at the sides of the head; maxillary palpi 2-jointed, labial palpi 2-jointed; mandibles triangular, with one or two minute teeth near their apex. Thorax: wings with one marginal and three submarginal cells, the second submarginal cell receiving the recurrent nervure near its base; legs elongate, the spur which arms the apex of the intermediate and posterior tibiæ simple, that at the apex of the anterior pair pectinate within. Abdomen: the node of the peduncle incrassate, a deep strangulation between the first and second segments.

1. ECTATOMMA TUBERCULATA. Pl. VII. figs. 10–13. B.M.

Formica tuberculata, *Latr. Fourm.* 210. viii. f. 46. A. ☿, 46. C. ♀.
Oliv. Encycl. Méth. vi. 498. 41.
Formica tridentata, *Fabr. Syst. Piez.* 412. 69.

Hab. South America; Brazil (Para; Santarem).

Male. Length 5 lines.—Fuscous or black, somewhat varying in colour: the antennæ as long as the insect. Head small; narrowed behind and transversely striated behind the ocelli, in front of which the striation is finer and longitudinal; the face has three carinæ between the antennæ, the clypeus triangular and strongly striated, the antennæ fulvous beneath; the mandibles and legs rufo-testaceous; the metathorax and node of the peduncle obscurely testaceous; the wings subhyaline, the nervures

rufo-testaceous; the mesothorax and scutellum longitudinally striated, and having two oblique impressed lines which meet in the middle. Abdomen elongate; the apical margin of the first segment constricted, the two basal segments finely longitudinally aciculate, the third and following segments smooth and shining; the apex of the abdomen pale rufo-testaceous.

Hab. Brazil (Para; Santarem). (Coll. H. W. Bates.)

The sexes of this species were taken from the nest by Mr. Bates; the females and workers do not vary much in colouring, but the males differ considerably, some examples being entirely pale rufo-testaceous.

2. ECTATOMMA BRUNNEA. B.M.

Female. Length 5 lines.—Deep red-brown: finely striated and somewhat shining; the striation on the head, mandibles and mesothorax, longitudinal, that on the prothorax, metathorax and node of the peduncle, transverse; the basal segment of the abdomen has a very fine curved striation as well as the second segment, on the latter it is very delicate; the apical margins of two or three of the apical segments, as well as the apex itself, bright shining rufo-testaceous; the node of the abdomen incrassate, rounded and blunt at the apex; the insect with short, scattered, pale glittering hairs; the wings flavo-hyaline, the nervures pale testaceous; the metathorax has two short teeth.

Worker.—Rather smaller than the female, of the same colour and similarly striated; the thorax anteriorly produced into a short sharp angular tooth on each side; the metathorax has also two short acute teeth; the thorax is narrower and more elongate than in the female, and the apical joints of the tarsi are pale testaceous.

Hab. Brazil (Santarem).

This species, independent of its darker colour, is differently and much more finely sculptured and striated than *tuberculata*; the specimens of the latter have the head very coarsely grooved or striated, the grooves with many transverse reticulations, the posterior angles of the vertex acute; in *E. brunnea* they are rounded.

3. ECTATOMMA CONCINNA. B.M.

Female. Length 6 lines.—Chestnut-brown: delicately and evenly striated; the striation on the head, mesothorax, scutellum, node of the peduncle and second segment of the abdomen is longitudinal, that on the prothorax is obliquely curved; on the metathorax and basal segment of the abdomen it is transversely

curved; the clypeus truncate in front, with the lateral angles emarginate; the mandibles bent, smooth and shining, their inner edge only touching towards their apex, and being finely denticulate; the eyes less prominent than in *tuberculata* or *brunnea*; the wings subhyaline, the nervures rufo-testaceous, and covered with a fine downy pubescence; the node of the peduncle subglobose, and produced behind into an obtuse tooth or tubercle; beneath, it is pinched into a sharp longitudinal edge, with a tooth at the base and another about the middle.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

This species resembles the two preceding, but is readily distinguished by the fineness of the striation, and by not having any angles or teeth on the head and thorax; the pubescent wings are a strong distinctive character.

4. ECTATOMMA PUNCTATA. B.M.

Worker. Length 4 lines.—Obscure reddish-brown: the head, thorax, and node of the peduncle, with distant large shallow punctures, the interstices between the punctures very closely and very finely punctured; the legs and mandibles of a brighter red than the rest of the body; the mandibles finely striated longitudinally, their inner edge very finely serrated; the anterior margin of the clypeus rounded, the posterior margin of the vertex truncated. Thorax oblong, slightly narrowed posteriorly; the metathorax with a slight excavation, the shape of the anterior face of the node of the peduncle, which is curved in front and rounded behind, with an impressed central line above. Abdomen closely covered with very delicate shallow punctures; a deep strangulation between the first and second segments, the apical margins of the third and following segments pale rufo-testaceous.

Hab. Australia (Port Lincoln).

5. ECTATOMMA ACICULATA. B.M.

Worker. Length 5 lines.—Black: the mandibles, legs and abdomen obscurely ferruginous; the head closely covered with large coarse shallow punctures, which run into diverging striæ on the vertex; the head truncate behind. Thorax elongate, with distant shallow punctures; the node of the abdomen incrassate and subconical. Abdomen: the first and second segments transversely and delicately aciculate.

Hab. Australia; Hunter River.

This species very closely resembles *E. punctata*, of which it

may possibly be an extreme variety; but, independent of the difference in the sculpture of the abdomen, the head is rather longer behind the eyes, the thorax is much more sparingly punctured, and the node of the peduncle has no deeply impressed line.

Genus 7. PACHYCONDYLA.

Head oblong, subquadrate, the anterior margin of the clypeus rounded; mandibles large, stout and produced, their inner margin denticulate; antennæ clavate; eyes placed forward on the sides of the head, ovate, and of a medium size; the labial palpi 4-jointed, the maxillary palpi 4-jointed. Thorax oblong, and slightly narrowed posteriorly; the calcaria pectinate. Abdomen elongate; the node of the peduncle incrassate, quadrate or subquadrate, elevated to the same level as the first segment, and usually of nearly the same width.

1. PACHYCONDYLA CRASSINODA. Pl. VII. figs. 14–16. B.M.

Formica crassinoda, *Latr. Hist. Nat. Fourm.* 198. pl. 7. f. 41. A. ♀, D. ♀.

Fabr. Syst. Piez. 408. 51.

St. Farg. Hym. i. 191. 3.

Erichs. Faun. et Flo. Brit. Guiana, iii. 593.

Hab. South America; Demerara; Brazil (Para).

2. PACHYCONDYLA SIMILLIMA. Pl. VII. fig. 17.

Female. Length 9 lines.—Black: the head and thorax subopake, the abdomen shining. Head as wide as the thorax, longitudinally striated; the projections on the face, beneath which the antennæ are inserted, smooth, shining and rufo-piceous, the scape obscurely so; between the antennæ are three longitudinal grooves, the central one narrowest; mandibles very large, elongate, bent downwards, shining and finely striated, the inner margin serrated, and with a row of strong punctures. The prothorax with a transverse curved striation; the mesothorax longitudinally striated as well as the scutellum, the latter shining in the middle; the metathorax striated transversely; the wings fulvo-hyaline, the nervures ferruginous; the legs pubescent, the anterior tarsi densely so. Abdomen: the scale of the petiole incrassate, transversely striated and slightly emarginate above, slightly bent or curved towards the thorax. Abdomen with a slight silky grey pubescence, most dense at the sides, the constriction not very deep between the first and second segments;

the apical margins of the segments rufo-piceous; the scale produced beneath into a large conical tubercle pointed at the apex.

Hab. Cape of Good Hope. (Coll. F. Smith.)

3. PACHYCONDYLA STRIATA. B.M.

Worker. Length 6¼ lines.—Black, subopake. Head very delicately striated longitudinally; the mandibles bent, and crossing at their apex, having a few elongate scattered punctures, and their inner margin denticulate. Thorax oblong, the sides flattened, the disk slightly convex, and longitudinally striated, the oblique truncation of the metathorax transversely so; the apical joints of the tarsi rufo-piceous; the anterior tarsi and the tibiæ beneath, clothed with ferruginous pubescence; the legs with a few short scattered ferruginous hairs, the calcaria ferruginous. Abdomen: the node of the peduncle incrassate, elevated to a level with the first segment of the abdomen, rounded above; when closely applied to the abdomen, forming apparently the basal segment; the apical segment with thin pale pubescence, and having an elongate naked shining narrow space in the middle; the abdomen thinly sprinkled with erect ferruginous hairs.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

This species resembles the *crassinoda* of Latreille, but is at once distinguished by its smaller size, its striated head and thorax, and by the lateral margins of the latter having a sharp edge.

4. PACHYCONDYLA RUFIPES. B.M.

Ponera rufipes, *Jerdon, Madras Journ. Lit. & Sci.* (1851) p. 119?

Worker. Length 5–6 lines.—Black: the antennæ, mandibles and legs ferruginous; head oblong, granulated and interspersed with shallow punctures; the face with a central impressed line, which extends from the anterior margin half-way towards the vertex. Thorax sculptured the same as the head, rounded in front, concavely truncate behind, and slightly narrowed posteriorly. Abdomen: the node punctured, its posterior margin serrated, and having a tooth beneath; the first and second segments longitudinally grooved, and the apical segments rufo-testaceous.

Hab. Malabar; Northern India; Hong Kong.

5. PACHYCONDYLA TRIDENTATA. B.M.

Worker. Length 6 lines.—Black: punctured and grooved like *P. rufipes*, of which it may be a variety; the only difference

being, that, with the exception of its mandibles and the apex of the abdomen, it is black; the posterior margin of the node of the peduncle is furnished with three sharp spines, not serrated.

Hab. Borneo (Sarawak).

6. PACHYCONDYLA PILIVENTRIS. B.M.

Worker. Length 6 lines.—Black: head oblong and rugose; the mandibles and antennæ obscurely ferruginous. Thorax of the same form as in *P. crassinoda*, rugose and obliquely truncated posteriorly; legs obscurely fusco-ferruginous, the apex of the joints brighter. Abdomen: the posterior margin of the node of the peduncle not serrated; the first and second segments grooved as in *P. crassinoda*, but less coarsely so; the apical segments rufo-testaceous; the abdomen covered with rather long pubesence, most dense at the apex.

Hab. Australia (Adelaide).

7. PACHYCONDYLA BISPINOSA.

Worker. Length 6 lines.—Closely resembling *P. rufipes*, the mandibles, legs and antennæ being red; the thorax and head similarly sculptured; the metathorax truncate, the margin of the truncation with a stout curved spine on each side; the node of the peduncle has its posterior margin denticulate, with a longer tooth at the lateral angles and a tooth beneath; the first and second segments of the abdomen longitudinally grooved; the apical segments rufo-testaceous.

Hab. Australia? (Coll. F. Smith.)

8. PACHYCONDYLA ASTUTA. B.M.

Worker. Length 5 lines.—Black: the mandibles, flagellum, tibiæ and tarsi ferruginous; the head oblong and delicately striated longitudinally. Thorax elongate, rounded anteriorly and obliquely truncate posteriorly; the prothorax striated, the striæ somewhat obliquely curved; the meso- and metathorax slightly rugose. The node of the abdomen compressed, thick and bent forwards, the upper margin rounded, the anterior and posterior surfaces transversely striated. Abdomen oblong, slightly pilose and shining; the posterior margins of the segments rufo-piceous, the apex ferruginous.

Hab. Australia.

9. PACHYCONDYLA PUNCTATA. B.M.

Worker. Length 3¼ lines.—Black: the antennæ, mandibles, margins of the carinæ between the antennæ, the legs and apex of the abdomen, ferruginous; the head, thorax, node of the peduncle, and first segment of the abdomen with deep scattered punctures; the insect covered with grey pile; the metathorax truncate, the truncation slightly concave; the node of the peduncle incrassate, elevated to the same height as the first segment, elongated, and forming as it were a basal segment; the apical margin of the first segment ferruginous.

Male.—About the same size as the worker, which it greatly resembles, differing in the usual sexual distinctions of a smaller head, larger eyes; the ocelli very bright and glassy; the wings subhyaline, the nervures testaceous, the stigma fuscous.

Hab. St. Domingo.

10. PACHYCONDYLA MONTEZUMIA. B.M.

Female. Length 4 lines.—Black: the head a little wider than the thorax, emarginate behind, with the lateral angles rounded and longitudinally rugose, rather finely so; the mandibles, anterior margin of the head, the carinæ between the antennæ, the base and apex of the scape, and also the tip of the flagellum, ferruginous. Thorax oblong-ovate; the metathorax obliquely truncate, the truncation transversely striated; the disk of the thorax longitudinally and finely rugose, the prothorax transversely so; the wings fusco-hyaline, the nervures testaceous; the tibiæ and tarsi obscurely fusco-ferruginous. Abdomen oblong-ovate, thinly covered with a yellowish downy pile intermixed with a few long hairs, particularly at the apex; the node of the peduncle incrassate, of equal thickness at the base and apex, the superior margin rounded and elevated to the same height as the first segment.

Male. Length 3 lines.—Differs from the female in the usual characteristics of a smaller head and more elongate abdomen, but in other respects has a close resemblance to the other sex; the node of the peduncle is incrassate, and elevated to the same height as the first segment, but is widest at its base; the tibiæ and tarsi are pale rufo-testaceous as well as the mandibles and palpi.

Hab. Mexico.

Genus 8. AMBLYOPONE.

Amblyopone, *Erichs. Wiegm. Archiv* (1842), p. 260.

Female. Head subquadrate; antennæ 12-jointed, the scape

subclavate; mandibles straight, toothed in the middle on their inner edge and at their apex; eyes lateral, round, and of medium size; minute in the workers; ocelli three, in a triangle on the vertex, wanting in the workers. Thorax oblong-ovate. Wings: anterior pair with one marginal and two submarginal cells, the second extending to the apex of the wings; the thorax narrowed posteriorly in the workers. Legs short and stout, claws of the tarsi simple. Abdomen: the node of the peduncle subquadrate-rotundate, a deep strangulation between the first and second segments.

Male. Head transverse. Antennæ 13-jointed; scape short and conical.

1. AMBLYOPONE AUSTRALIS. Pl. VII. figs. 21–24. B.M.

Amblyopone australis, *Erichs. Wiegm. Archiv* (1842), p. 260 ☿.

Worker. Length 3 lines.—Shining ferruginous, or rufo-piceous; sparingly pubescent. Head large, the vertex and front down to the insertion of the antennæ, finely but rather distantly punctured; a deep central channel extends from the middle of the head to its anterior margin; on each side the head is obliquely striated; the mandibles longitudinally striated. Thorax: the prothorax rounded in front, convex, subglobose, punctured on the sides, the disk impunctate; the metathorax oblong, the sides parallel, truncate posteriorly, rather obliquely so. Abdomen oblong, smooth and shining, with the apex pale rufo-testaceous.

The female has the head more strongly punctured, the mesothorax much larger, and the scutellum developed; the wings subhyaline, with the nervures testaceous; the prothorax, metathorax, and sides of the node of the peduncle strongly punctured.

Male. Length 2½ lines.—Black, shining and pubescent: head and thorax strongly punctured; the head transverse, the eyes large and lateral; antennæ elongate, filiform; the antennæ, tibiæ and tarsi rufo-testaceous; wings as in the female.

Erichson only describes the worker of this species: the male and female are in the Museum Collection.

2. AMBLYOPONE OBSCURA. B.M.

Female. Length 4 lines.—Black and shining: the antennæ, mandibles, and face anteriorly ferruginous and punctate-striate, the vertex coarsely punctured; the face with a central channel which terminates at the anterior ocellus. Thorax oblong, rounded anteriorly and truncate posteriorly, the truncation transversely rugose; above coarsely punctured, the sides obliquely striated;

the legs and sides more or less ferruginous; wings subhyaline, the nervures fuscous. Abdomen oblong, with scattered punctures; the apex acute and rufo-testaceous.

Worker. Closely resembles the female, but is less coarsely punctured on the vertex, and the truncation of the metathorax is not rugose.

Hab. Australia.

This species is rather larger than *A. australis*, of a different colour, and more coarsely sculptured, but may very possibly be only a local variety of the Tasmanian species.

3. AMBLYOPONE FERRUGINEA. B.M.

Worker. Length 2 lines.—Ferruginous: the head covered with a rugose punctate striation, the mandibles shorter and more bent than in *A. australis*; the prothorax striated, the striæ obscurely punctured; the meso- and metathorax smooth and shining; the node of the peduncle transverse, rounded or subglobose; the abdomen oblong, widest towards the apex, which is acute.

Hab. Melbourne.

Genus 9. TYPHLOPONE.

Typhlopone, *Westw. Introd. Class. Ins.* ii. 219 (1840).
Labidus (Typhlopone), *Shuck. Ann. & Mag. Nat. Hist.* v. 326 (1840).
Cosmacetes, *Spin. Mem. Accad. Torino*, xiii. 70 (1853).

Head oblong, more or less emarginate behind, nearly as long as the thorax; eyes and ocelli obsolete in the workers. Antennæ subclavate, about the length of the head, 10-jointed; the scape nearly as long as the flagellum, and subclavate; mandibles curved, acute at their apex; the labial and maxillary palpi 2-jointed. Thorax oblong, much narrower than the head, a deep transverse suture separating the pro- and mesothorax; the legs stoutish, all the tibiæ with a calcar at their apex; the claws of the tarsi simple. Abdomen elongate-ovate; the node of the peduncle quadrate, of the same width as the base of the abdomen, which is truncate.

1. TYPHLOPONE FULVA. B.M.

Typhlopone fulva, *Westw. Introd. Class. Ins.* ii. 219 (1840); *Ann. & Mag. Nat. Hist.* vi. 87 ♀ (1841).
Typhlopone Kirbii, *Shuck. Ann. & Mag. Nat. Hist.* v. 265 (1840).
Hab. West India Islands? (Found in sugar.)

2. TYPHLOPONE WESTWOODII.

Typhlopone Westwoodii, *Shuck. Ann. & Mag. Nat. Hist.* v. 266 ☿ (1840).

Hab. South America.

3. TYPHLOPONE THWAITESII.

Typhlopone Thwaitesii, *Shuck. Ann. & Mag. Nat. Hist.* v. 326 ☿ (1840).

Hab. Sugar-casks from South America.

4. TYPHLOPONE SPINOLÆ.

Typhlopone Spinolæ, *Shuck. Ann. & Mag. Nat. Hist.* v. 327 ☿ (1840).

Hab. Sugar-casks from South America.

5. TYPHLOPONE SHUCKARDI.

Typhlopone Shuckardi, *Westw. Ann. & Mag. Nat. Hist.* vi. 88 ☿ (1841).

Hab. West India Islands? (Found in sugar.)

6. TYPHLOPONE DAHLBOMII.

Typhlopone Dahlbomii, *Westw. Ann. & Mag. Nat. Hist.* vi. 88 (1841).

Hab. West India Islands? (Found in sugar.)

7. TYPHLOPONE HOMALINA.

Cosmacetes homalinus, *Spin. Mem. Accad. Torino*, xiii. 71 ☿.

Hab. Brazil (Para).

8. TYPHLOPONE SERRATULA.

Worker. Length 2-2¼ lines.—Chestnut-red: the head and thorax darker than the abdomen; the apical joint of the antennæ pale testaceous; head smooth and shining, the sides nearly parallel, slightly narrowed posteriorly; a slightly impressed line runs upwards from the insertion of the antennæ half-way towards the vertex, which is slightly emarginate behind, the edge of the emargination crossed by a few short striæ. Thorax flattened above, and with a number of elongate punctures or short striæ. Abdomen: the node of the peduncle flattened above, quadrate, and with a number of irregular depressions or punctures; the lateral margins slightly raised; the segments impunc-

tate, the apical one obliquely truncated, the lateral margins finely serrated; the abdomen sprinkled with pale fulvous hairs, most thickly so at the apex.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

9. TYPHLOPONE ORANIENSIS. B.M.

Typhlopone oraniensis, *Lucas, Explo. Sc. d'Algér.* iii. 302. t. 16. f. 11 ☿.

Hab. Algeria.

10. TYPHLOPONE PUNCTATA. B.M.

Worker. Length 2-3½ lines.—Chestnut-red, smooth and shining: the head and thorax punctured, the head most finely so, the abdomen delicately punctured. Head oblong, emarginate behind, the sides nearly parallel, slightly narrowed behind; the mandibles pitchy chestnut. Thorax convex above, the metathorax not channeled. Abdomen: the node of the petiole subquadrate, the first and second segments slightly constricted; the apex of the terminal segment abruptly truncated, with a minute spine on each side and one in the centre of the inferior margin.

Hab. Cape of Good Hope.

11. TYPHLOPONE CURTISII. B.M.

Typhlopone Curtisii, *Shuck. Ann. & Mag. Nat. Hist.* v. 265 (1840).

Hab. Ceylon.

12. TYPHLOPONE LÆVIGATA. Pl. VIII. fig. 4. B.M.

Worker. Length 4 lines.—Chestnut-red, smooth and shining: head longitudinally channeled, slightly so in some examples; the inner margin and apex of the mandibles black. Thorax: a slightly impressed channel in front; the peduncle narrowed and rounded in front; the abdomen and legs rather paler than the head; the margins of the segments of the former slightly constricted.

Hab. Borneo (Sarawak).

Genus 10. ANOMMA.

Anomma, *Shuck. Ann. & Mag. Nat. Hist.* v. 326 (1840).
Sphegomyrmex, *Imhoff, Bericht über die Verh. der Naturf. Gesellsch. zu Basel,* x. (1852) p. 175.

Head widest in front; mandibles elongate, curved and forci-

pate, with a large curved tooth at about half their length within; the labial palpi 2-jointed; the maxillary palpi 2-jointed; the antennæ slender and 11-jointed. Thorax elongate, constricted in the middle; the legs slender and elongate. The node of the peduncle of the abdomen incrassate, elongate and narrow; the segments of the abdomen very slightly constricted.

The Ants belonging to this genus are those known as the "Driver and Visiting-Ants of Africa." An interesting account of their habits is published in the 'Transactions of the Entomological Society.' They are described as marching in vast armies, driving everything before them capable of muscular motion, so formidable are they from their numbers and bite: in respect to that fact they stand unique in their habits, and in distinction from other species. Their sallies are made in cloudy days and in the night, chiefly the latter: an exposure to the direct rays of the sun is almost immediately fatal. If they should be detained abroad till late in the morning, on a sunny day, by the quantity of their prey, they construct arches over their path; but should their way run under thick grass, &c., affording sufficient shelter, the arch is dispensed with. Whenever a stream of water intercepts their course in their excursions and migrations, if it should not be extensive, they compass it; but if otherwise, they make a line or chain of one another, gradually extending themselves by numbers across, till a connexion is formed with the opposite side, and thus a bridge is constructed, over which the main body passes in safety. The Drivers delight in rather low localities, generally the base of hills; consequently they are liable to be driven from their haunts during the rainy season, when the violent and continued rains, and the sudden swelling of rivers, cause the low grounds to be overflowed. In such an emergency, they throw themselves into a rounded mass, deposit their pupæ and eggs in the centre, and thus float upon the water till a place of safety is reached, or the flood subsides. Their entrance into a house is soon known by the simultaneous and universal movement of rats, mice, lizards, cockroaches, &c., and of the numerous vermin that infest dwellings, which renders their visits sometimes desirable. The mandibles of the Driver-Ant of the largest size are formidable, strongly hooked, having one tooth; those of the second size are flatter, sharper, and armed with strong teeth; the edges are finely serrated, and admirably calculated for lacerating and cutting muscular fibre. The inhabitants of the negro villages are frequently obliged to abandon their dwellings, taking with them their children, and wait until the ants have passed.

The males and females of *Anomma* are not known.

1. ANOMMA BURMEISTERI. Pl. VIII. fig. 2. B.M.

Anomma Burmeisteri, *Shuck. Ann. & Mag. Nat. Hist.* v. 326 ♀ (1840).

Westw. Ann. & Mag. Nat. Hist. vi. 88. pl. 11. f. 4 (1841).

Hab. Sierra Leone.

2. ANOMMA ARCENS. Pl. VIII. fig. 3. B.M.

Anomma arcens, *Westw. Trans. Ent. Soc.* v. 17. pl. 1. fig. 3 ♀ (1847–49).

Hab. West Africa (Fish Town, near Cape Palmas); Old Calabar.

There is a very close resemblance between *A. arcens* and *A. Burmeisteri*; the distinctions are, that in the former the head is highly polished, perfectly smooth, entirely destitute of punctures or sculpture; in the latter the head is subopake and covered with a very delicate reticulation; the lateral angles of the emargination of the head posteriorly are subacute in *A. arcens*; in the other species they are distinctly rounded.

Subfam. 1. MYRMICIDÆ.

Genus 1. MYRMICA.

Myrmica, *Latr. Gen. Crust. et Ins.* iv. 131.

The number of joints varying in the different divisions into which the genus is subdivided, the maxillary palpi from 6 to 1, the labial palpi from 4 to 2. Ocelli obsolete in the workers. Females and workers armed with stings; the petiole of the abdomen with two nodes. Pupæ usually naked, not enclosed in cocoons, but casting off a thin pellicle on arriving at the perfect condition or imago.

SUBDIVISION 1.

The maxillary palpi 6-jointed, the labial palpi 4-jointed. The anterior wings with the marginal and submarginal cells incomplete, and with one complete discoidal cell. The antennæ clavate. Sp. 1–8. (Pl. VIII. figs. 5–9.)

1. MYRMICA RUBIDA.

Formica rubida, *Latr. Hist. Nat. Fourm.* 267.
Schill. Bemerk. über die Schles. 56.

Myrmica rubida, *Mayr. Form. Austr.* 128. 1.
Nyl. Form. Fr. et d'Algér. 77.

Hab. France; Italy; Switzerland; Germany.

2. MYRMICA RUGINODIS. B.M.

Myrmica ruginodis, *Nyl. Adno. Mon. Form. Bor. Eur.* 929. 2; *Addit. Adno. Mon. Form. Bor. Eur.* 1052. 19; *Form. Fr. et d'Algér.* 79.
Foerst. Hym. Stud. Form. 66. 36.
Schenck, Beschr. Nass. Ameis. 77.
Smith, Brit. Form. 116. 2.
Mayr. Form. Austr. 135. 4.
Myrmica vagans, *Curtis, Trans. Linn. Soc.* xxi. 213. 3.

Hab. Britain; France; Germany; Hungary; Finland.

This and the two following species were formerly included under the name of *M. rubra*. Dr. Nylander says the male is identical with the typical specimen of *M. vagans* in the Museum at Kiel, and that the female is the *M. rubra*, the male also standing as the male of *M. cæspitum*: this confusion is entirely avoided by adopting the names proposed by Nylander for the three closely allied, but very distinct species. This species would therefore, according to the laws of priority, be the *M. rubra* of Fabricius; but we cannot be certain that it would be so of Linnæus, who would undoubtedly have included this and two or three of the following species under that name.

3. MYRMICA SCABRINODIS. Pl. VIII. figs. 6,7,9,10,11. B.M.

Myrmica scabrinodis, *Nyl. Adno. Mon. Form. Bor. Eur.* 930. 3; *Addit. Adno. Mon. Form. Bor. Eur.* 1052. 20; *Form. Fr. et d'Algér.* 81. 6.
Foerst. Hym. Stud. Form. 67. 37.
Schenck, Beschr. Nass. Ameis. p. 78.
Smith, Brit. Form. 115. 1.
Mayr. Form. Austr. 138. 6; *Ungar. Ameis.* 18. 2.
Myrmica cæspitum, *Zett. Ins. Lapp.* 450. 1.
Myrmica rubra, *Curtis, Trans. Linn. Soc.* xxi. 213. 1.

Hab. Britain; France; Germany; Hungary; Russia; Finland.

4. MYRMICA RUGULOSA. B.M.

Myrmica rugulosa, *Nyl. Addit. alt. Adno. Mon. Form. Bor. Eur.* 32; *Form. Fr. et d'Algér.* 80. 5.
Mayr. Form. Austr. 133. 3.
Myrmica clandestina, *Foerst. Hym. Stud. Form.* 63. 34.
Schenck, Beschr. Nass. Ameis. 84.

Hab. Britain; France; Germany; Switzerland; Finland.

5. MYRMICA SULCINODIS. B.M.

Myrmica sulcinodis, *Nyl. Adno. Mon. Form. Bor. Eur.* 934; *Form. Fr. et d'Algér.* 80. 5.
Smith, Brit. Form. 119. 4.
Mayr. Form. Austr. 136. 5.
Myrmica perelegans, *Curtis, Trans. Linn. Soc.* xxi. 214. 5.

Hab. Britain; France; Germany; Switzerland; Finland.

Typical specimens from Dr. Nylander and Mr. Curtis have been carefully compared, and, in our opinion, they are identical.

6. MYRMICA LÆVINODIS. Pl. VIII. fig. 8. B.M.

Myrmica lævinodis, *Nyl. Adno. Mon. Form. Bor. Eur.* 1052. 18; *Addit. Adno. Mon. Form. Bor. Eur.* 927. 1; *Form. Fr. et d'Algér.* 78. 2.
Foerst. Hym. Stud. Form. 64. 35.
Curtis, Trans. Linn. Soc. xxi. 213. 2.
Schenck, Beschr. Nass. Ameis. 75.
Smith, Brit. Form. 118. 3.
Mayr. Form. Austr. 130. 2; *Ungar. Ameis.* 18. 1.

Hab. Britain; France; Germany; Hungary; Finland; Russia.

7. MYRMICA GRANULINODIS.

Myrmica granulinodis, *Nyl. Addit. Adno. Mon. Form. Bor. Eur.* 1060.

Hab. Siberia.

8. MYRMICA LOBICORNIS. Pl. XII. fig. 12. B.M.

Myrmica lobicornis, *Nyl. Adno. Mon. Form. Bor. Eur.* 932. 4; *Addit. Adno. Mon. Form. Bor. Eur.* 1052. 21; *Addit. alt.* 31; *Form. Fr. et d'Algér.* 82. 7.
Foerst. Hym. Stud. Form. 69.
Schenck, Beschr. Nass. Ameis. 82.
Mayr. Form. Austr. 140. 7.
Myrmica denticornis, *Curtis, Trans. Linn. Soc.* xxi. 215. 7. t. 23. f. 18, 19.
Smith, Brit. Form. 120. 5.

Hab. Britain; France; Germany; Hungary; Italy; Finland.

We have compared specimens of this species from Dr. Nylander with others from Mr. Curtis, and they are certainly identical.

SUBDIVISION 2.

Species minute. The maxillary palpi 4-jointed; the labial

palpi 3-jointed. Antennæ clavate, the club 3-jointed. Sp. 9–13.

(Genus TETRAMORIUM, *Mayr.*)

9. MYRMICA CÆSPITUM. Pl. VIII. figs. 15, 16. B.M.

Formica cæspitum, *Linn. Faun. Suec.* no. 1726; *Syst. Nat.* i. 963. 11 ☿.
Latr. Hist. Nat. Fourm. 251. t. 10. f. 63.
Formica binodis, *Linn. Amœn. Acad.* vi. 413. 94; *type in Cab. Mus. Linn. Soc.*
Myrmica fuscula, *Nyl. Adno. Mon. Form. Bor. Eur.* 935. 6; *Addit. Mon. Form.* 1053. 23; *Form. Fr. et d'Algér.* 86. 13.
Foerst. Hym. Stud. Form. 56. 29.
Schenck, Beschr. Nass. Ameis. 86.
Myrmica impura, *Foerst. Hym. Stud. Form.* 48. 22 ☿.
Myrmica modesta, *Foerst. Hym. Stud. Form.* 49. 23 ☿.
Myrmica cæspitum, *Latr. Hist. Nat. Crust. et Ins.* xiii. 259.
Losana, Form. Piem. 327.
Curtis, Trans. Linn. Soc. xxi. 215. 8.
Smith, Brit. Form. 122.
Nyl. Form. Fr. et d'Algér. 86. 13.
Tetramorium cæspitum, *Mayr. Form. Austr.* 154. 2; *Ungar. Ameis.* 19. 1.

Hab. Britain; France; Germany; Hungary; Finland.

10. MYRMICA KOLLARI.

Myrmica Kollari, *Mayr. Beschr. ein neuer Ameis.* 7.
Tetramorium Kollari, *Mayr. Form. Austr.* 153. 1.
Nyl. Form. Fr. et d'Algér. 87 (note).

Hab. Austria.

11. MYRMICA ATRATULA.

Myrmica atratula, *Schenck, Beschr. Nass. Ameis.* 91.
Tetramorium atratulum, *Mayr. Form. Austr.* 157. 3; *Ungar. Ameis.* 20. 2.
Nyl. Form. Fr. et d'Algér. 87 (note).

Hab. Austria; Germany; Hungary.

12. MYRMICA ANGUSTULA.

Myrmica angustula, *Nyl. Form. Fr. et d'Algér.* 88. 14.

Hab. France.

13. MYRMICA LIPPULA. B.M.

Myrmica lippula, *Nyl. Addit. alt. Form. Bor. Eur.* 41. 8.
Myrmica Minkii, *Foerst. Hym. Stud. Form.* 63. 33.
Schenck, Beschr. Nass. Ameis. 142.
Mayr. Form. Austr. 143.

Hab. Britain; France; Germany; Austria; Finland.

SUBDIVISION 3.

Species minute. Maxillary palpi 5-jointed; labial palpi 3-jointed. Antennæ clavate, club 3-jointed.—Sp. 14–30. (Pl. VIII. figs. 16 *a*, 17, 18, 19.)

(Genus LEPTOTHORAX, *Mayr.*)

14. MYRMICA ACERVORUM. B.M.

Formica acervorum, *Fabr. Ent. Syst.* ii. 358. 38; *Syst. Piez.* 407. 50.
Myrmica acervorum, *Zett. Ins. Lapp.* 451.
Nyl. Adno. Mon. Form. Bor. Eur. 936. 7; *Addit. Mon. Form.* 1057; *Form. Fr. et d'Algér.* 89. 16.
Foerst. Hym. Stud. Form. 61. 32.
Schenck, Beschr. Nass. Ameis. p. 97.
Smith, Brit. Form. 124. 8.
Leptothorax acervorum, *Mayr. Form. Austr.* 164. 1.
Myrmica lacteipennis, *Zett. Ins. Lapp.* 452. 5 ♂.
Myrmica graminicola, *Latr. Hist. Nat. Fourm.* 255. ☿ (var.).

Hab. Britain; France; Germany; Austria; Finland.

15. MYRMICA CLYPEATA.

Leptothorax clypeatus, *Mayr. Form. Austr.* 164. 1.
Nyl. Form. Fr. et d'Algér. 90 (note).

Hab. Austria.

16. MYRMICA GREDLERI.

Leptothorax Gredleri, *Mayr. Form. Austr.* 166. 1.
Nyl. Form. Fr. et d'Algér. 90 (note).

Hab. Austria.

17. MYRMICA MUSCORUM. B.M.

Myrmica muscorum, *Nyl. Addit. Mon. Form. Bor. Eur.* 1054; *Form. Fr. et d'Algér.* 90.
Leptothorax muscorum, *Mayr. Form. Austr.* 167. 4.

Hab. France; Germany; Austria; Finland.

18. MYRMICA TUBERUM.

Formica tuberum, *Fabr. Syst. Ent.* 393. 15; *Ent. Syst.* ii. 358. 36; *Syst. Piez.* 407. 47.
Myrmica tuberum, *St. Farg. Hym.* i. 183. 3 ?
Zett. Ins. Lapp. 452. 4.
Nyl. Adno. Mon. Form. Bor. Eur. 939; *Addit. Adno. Mon. Form.* 1057; *Form. Fr. et d'Algér.* 91. 17.

Hab. France.

19. MYRMICA TUBEROSA.

Formica tuberosa, *Latr. Hist. Nat. Fourm.* 259.
Myrmica tuberum, *St. Farg. Hym.* i. 183. 3.

Hab. France.

20. MYRMICA NIGRICEPS.

Leptothorax nigriceps, *Mayr. Form. Austr.* 169. 6.
Nyl. Form. Fr. et d'Algér. 92 (note).

Hab. Austria.

21. MYRMICA CORTICALIS.

Leptothorax corticalis, *Schenck, Beschr. Nass. Ameis.* p. 100.
Mayr. Form. Austr. 168. 5.
Nyl. Form. Fr. et d'Algér. 93 (note).

Hab. Austria; Tyrol; Nassau.

22. MYRMICA AFFINIS.

Leptothorax affinis, *Mayr. Form. Austr.* 170. 7.
Nyl. Form. Fr. et d'Algér. 94 (note).

Hab. Austria.

23. MYRMICA DILUTA.

Myrmica diluta, *Nyl. Addit. alt. Adno. Mon. Form. Bor. Eur.* 41. 9.

Hab. South Russia.

24. MYRMICA SIMILLIMA.

Myrmica simillima, *Nyl. Form. Fr. et d'Algér.* 94.
Smith, Brit. Hym. 118.
Leptothorax affinis, *Mayr. Form. Austr.* 170. 7 ?
(See *Nyl. Form. Fr. et d'Algér.* 94, note.)

Hab. Britain; Austria.

25. MYRMICA UNIFASCIATA.

Formica unifasciata, *Latr. Hist. Nat. Fourm.* 257.
Myrmica unifasciata, *Losana, Form. Piem.* 332.
Nyl. Addit. alt. 44; *Form. Fr. et d'Algér.* 92. 18.
Schenck, Beschr. Nass. Ameis. 101.
Leptothorax unifasciata, *Mayr. Form. Austr.* 172. 9; *Ungar. Ameis.* 21. 2.

Hab. France; Germany; Austria; Russia.

The *M. unifasciata* of Nylander is certainly not the *unifasciata* of Smith's Essay, nor have we seen it in any British collection; all the English examples have the antennæ pale red, and the fascia on the abdomen extends to, or frequently beyond, the second segment. Latreille may have confounded the two species, but he has not mentioned the dark club of the antennæ,—a conspicuous character; the width of the band on the abdomen varies in different specimens, so that it would rather appear that Latreille was describing Schenck's insect, *M. cingulata*; but we think it best to adopt the nomenclature of Nylander and others.

26. MYRMICA NYLANDERI. B.M.

Myrmica Nylanderi, *Foerst. Hym. Stud. Form.* 53.
Myrmica cingulata, *Schenck, Beschr. Nass. Ameis.* 104.
Nyl. Form. Fr. et d'Algér. 93. 20.
Leptothorax Nylanderi, *Mayr. Form. Austr.* 175. 11.
Myrmica parvula, *Schenck, Beschr. Nass. Ameis.* 103. 140.
Leptothorax parvulus, *Mayr. Form. Austr.* 176. 12.
Stenamma albipennis, *Curtis, Trans. Linn. Soc.* xxi. 218.
Myrmica unifasciata, *Smith, Brit. Form.* 128. 11.
Curtis, Trans. Linn. Soc. xxi. 216. 12.

Hab. Britain; France; Germany; Austria.

27. MYRMICA SIMPLICIUSCULA.

Myrmica simpliciuscula, *Nyl. Form. Fr. et d'Algér.* 92. 19.

Hab. France.

28. MYRMICA INTERRUPTA.

Myrmica interrupta, *Schenck, Beschr. Nass. Ameis.* 106. 140.
Leptothorax interruptus, *Mayr. Form. Austr.* 174. 10.

Hab. Austria.

29. MYRMICA RECEDENS.

Myrmica recedens, *Nyl. Form. Fr. et d'Algér.* 94. 21.

Hab. France.

30. MYRMICA LÆVIGATA.

Myrmica lævigata, *Smith, Brit. Form.* 130. 13.
Nyl. Form. Fr. et d'Algér. 94.,

Hab. Britain. France?

SUBDIVISION 4.

Species minute. Maxillary palpi 4-jointed, labial palpi 3-jointed; mandibles dentate; club of the antennæ 3-jointed; body smooth and shining.—Sp. 31.

(Genus FORMICOXENUS, *Mayr.*)

31. MYRMICA NITIDULA. Pl. VIII. figs. 13, 14. B.M.

Myrmica nitidula, *Nyl. Addit. Adno. Mon. Form. Bor. Eur.* 1058; *Addit. Alt.* 34; *Form. Fr. et d'Algér.* 94. 22 ♂ ♀ ☿.
Foerst. Hym. Stud. Form. 55.
Myrmica læviuscula, *Foerst. Hym. Stud, Form.* 54. 73.
Myrmica debilis, *Foerst. Hym. Stud. Form.* 52.
Stenamma Westwoodii, *Steph. Westw. Intr. Class. Ins.* ii. 226. t. 86. f. 11 ♂.
Formicoxenus nitidulus, *Mayr. Form. Austr.* 146. 1.

Hab. Britain; France; Germany; Finland.

SUBDIVISION 5.

Maxillary palpi 5-jointed, labial palpi 3-jointed; mandibles with their apex truncate and not toothed; antennæ 11-jointed, the club 4-jointed.—Sp. 32, 33.

32. MYRMICA SUBLÆVIS. Pl. VIII. figs. 20–24.

Myrmica sublævis, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur* 33; *Form. Fr. et d'Algér.* 95. 23.

Hab. France; Finland; Lapland.

33. MYRMICA HIRTULA. B.M.

Myrmica hirtula, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 45; *Form. Fr. et d'Algér.* 96 (note).

Hab. Finland (Helsingfors).

SUBDIVISION 6.

Species minute. Maxillary palpi 2-jointed, labial palpi 2-jointed; antennæ of female and worker 10-jointed, the club composed

of two joints; anterior wings with one marginal cell, not closed at the apex, one submarginal cell and one discoidal cell.—Sp. 34, 35.

(Genus DIPLORHOPTRUM, *Mayr.*)

34. MYRMICA FUGAX. Pl. VIII. figs. 25–28. B.M.

Formica fugax, *Latr. Hist. Nat. Fourm.* 265.
Schill. Bermerk. üb. die in Schles. &c. 56.
Myrmica fugax, *St. Farg. Hym.* i. 184.
Schenck, Beschr. Nass. Ameis. 107.
Smith, Brit. Form. 127. 10.
Myrmica flavidula, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 33; *Form. Fr. et d'Algér.* 99. 27.
Diplorhoptrum fugax, *Mayr. Form. Austr.* 178. 1; *Ungar. Ameis.* 21. 1.

Hab. Europe.

35. MYRMICA MOLESTA. B.M.

Myrmica molesta, *Say, Bost. Journ. Nat. Hist.* i. 293. 6 (1834).
Myrmica domestica, *Shuck. Mag. Nat. Hist.* 628 (1838).
Daniells, Proc. Linn. Soc. ii. 172.
Smith, Brit. Form. 131.
Curtis, Trans. Linn. Soc. xxi. 217. 13.
Nyl. Form. Fr. et d'Algér. 98. 26.

Hab. Britain; France; Brazil (Rio); N. America.

This species has been admitted into the lists of British Ants, but is undoubtedly an importation. The Rev. Hamlet Clark met with a small ant at Rio Janeiro, which he described as being very annoying: it was found everywhere, in-doors and out-of-doors, and upon everything; Mr. Clark brought a number of these to England, which have been carefully examined, and named provisionally *Myrmica intrudens*: this species is undoubtedly *M. molesta*, which has been introduced in merchandise. In this country it appears to be found in houses alone, and in some places has proved very annoying, rendering some of them uninhabitable: such was the case at Kemp Town, Brighton; and many houses in the vicinity of the British Museum swarm with them: in one of these all the sexes were procured from a nest under the kitchen hearth-stone; on turning up the latter it was found to cover a moving mass of ants, which filled the entire space occupied by the stone; countless numbers were destroyed by pouring boiling water on the colony, the females were by this means destroyed, and the pest got rid of. The female is of the same

colour as the workers, yellow with the apical portion of the abdomen dusky or black, the thorax being elongate-ovate, not narrowed behind; the male is a minute black insect with colourless wings, the neuration being scarcely perceptible.

The *Myrmica molesta* of Say, I consider identical with our insect, specimens from the United States having been carefully compared; it is described as being equally abundant and annoying in houses in that country, and is probably now of almost universal occurrence, like other insects which attach themselves to the habitations of man: South America is its native country.

Subdivision 7.

Maxillary palpi 2-jointed, labial palpi 2-jointed.—Sp. 36.

(Genus Monomarium, *Mayr.*)

36. Myrmica minuta.

Monomarium minutum, *Mayr. Form. Austr.* 180. 7.

Hab. Lombardy.

Species of India; Singapore; Ceylon; Malacca; Borneo.—Sp. 37–48.

37. Myrmica vastator. B.M.

Worker. Length ¾–1 line.—Pale ferruginous: the abdomen black, with about one-third at the base pale, entirely smooth and shining; the head wider than the thorax or abdomen, oblong, slightly emarginate behind; the eyes minute, the club of the antennæ three-jointed. Thorax deeply strangulated in the middle, the metathorax without spines. Abdomen ovate, truncate at the base, entirely destitute of pubescence.

Hab. India. (Coll. Major-General Hardwick.)

A number of these ants were found in the cocoon of an Indian moth.

38. Myrmica humilis.

Female. Length 1¼ line.—Head, antennæ, thorax, legs, and nodes of the abdomen, reddish-yellow and subopake; the eyes and abdomen black; wings hyaline and brilliantly iridescent; the first node of the peduncle clavate, the second much wider than the first and globose, the metathorax armed with two short acute spines.

Hab. India (Bombay). (Coll. East India House.)

39. MYRMICA RUGIFRONS.

Female. Length 3 lines.—Pale reddish-yellow; the first segment of the abdomen, except its extreme base, fuscous. Head elongate-quadrate, the anterior and posterior angles rounded; the eyes, ocelli, and inner margin of the mandibles, black, the latter denticulate; the head rugose, with a number of longitudinal fine carinæ, the hinder margin of the vertex emarginate. Thorax elongate-ovate, longitudinally rugose above, the prothorax transversely so, the metathorax concavely truncate at the apex, a short spine on each side at the verge of the truncation; the legs rather paler than the body; wings hyaline and iridescent, the nervures pale testaceous. Abdomen ovate, smooth and shining; the first node petiolated at the base, the second globose.

Hab. India (Penang). (Coll. East India House.)

40. MYRMICA BIDENTATA.

Worker. Length 1½ line.—Pale rufous; the abdomen rufo-piceous, with base and apex pale. Head oblong, very smooth and shining; the eyes small, placed rather forward at the sides of the head; the clypeus produced, concave above, the lateral angles with a stout acute tooth; the mandibles stout, and having three acute teeth at their apex. Thorax oblong, with a deep strangulation between the meso- and metathorax, the metathorax with a minute tubercle on each side, not toothed; the first node of the peduncle clavate, the second globose.

Hab. Calcutta. (Coll. East India House.)

This species is readily distinguished by its bidentate clypeus.

41. MYRMICA PELLUCIDA. B.M.

Worker. Length 1¼ line.—Head and thorax dark fusco-testaceous, antennæ and legs much paler, nearly white; the thorax with its divisions distinctly marked, that between the meso- and metathorax most strongly impressed, the metathorax without spines. Abdomen of a clear, pale, semi-transparent colour.

Hab. Singapore. (Coll. A. R. Wallace.)

"House-Ant, very active, but not destructive."—*Wallace.*

42. MYRMICA FRAGILIS. B.M.

Worker. Length 1¼ line.—Pale flavo-testaceous, smooth and shining. Head oblong-quadrate, eyes very small, placed forward on the sides of the head; antennæ clavate, the club

3-jointed; the thorax with a deep strangulation between the meso- and metathorax, the latter without spines; the abdomen fuscous at its apex.

Hab. Singapore. (Coll. W. W. Saunders, Esq.)

"House-Ant, very destructive."—*Wallace.*

43. MYRMICA BASALIS. B.M.

Worker. Length 1¼ line.—Pale testaceous, with the club of the antennæ and the abdomen, except its base, dark fuscous, and very smooth and shining; the head ovate, slightly emarginate behind; eyes small, placed forward on the sides of the head; the metathorax obliquely truncate, smooth and without spines. Abdomen ovate, truncate at the base.

Hab. Ceylon.

44. MYRMICA CONTIGUA. B.M.

Female. Length 2 lines.—Pale ferruginous: head and thorax opake, the abdomen black and shining, with the first segment and base of the second pale ferruginous; the eyes black. Thorax oblong-ovate, with a central abbreviated carina in front; a dark stain runs from the origin of the wings, passing beneath the post-scutellum; the metathorax unarmed, obliquely truncated, the truncation concave; the apical margins of the second and following segments of the abdomen testaceous.

Hab. Ceylon.

This is probably the female of *M. basalis*, but as they were not received together, it is uncertain.

45. MYRMICA GLYCIPHILA. B.M.

Worker. Length 1¼ line.—Testaceous, with the abdomen, except its base, fuscous; the head and thorax subopake, the abdomen shining; the flagellum 11-jointed, clavate; the thorax narrowed posteriorly, divided a little beyond the middle by a distinct suture, the metathorax not spined; the first node of the peduncle conical, elevated above the second, which is nearly globose; the abdomen truncate at the base and having a few long pale hairs at the apex.

Hab. Ceylon.

46. MYRMICA AGILIS.

Worker. Length 1 line.—Head and thorax pale ferruginous; abdomen black, with the base pale, very smooth and shining;

the flagellum clavate, the club 3-jointed, the basal joint of the flagellum as long as the three following; the metathorax with two minute spines. Abdomen ovate, the first node of the peduncle elongate, the second subglobose.

Hab. Malacca. (Coll. W. W. Saunders, Esq.)

47. MYRMICA TRACHYLISSA. B.M.

Female. Length 3 lines.—Ferruginous: the head and thorax coarsely rugose, longitudinally grooved, the grooves with deep, large punctures; the head very large, larger than the thorax, the latter nearly globose; the verge of the truncation of the metathorax widely emarginate, the lateral angles produced, forming acute teeth. Abdomen very smooth and shining, the nodes of the peduncle smooth, shining and subglobose.

Hab. Borneo. (Coll. A. R. Wallace.)

48. MYRMICA LONGIPES.

Worker. Length 2½ lines.—Dark brown: head much wider than the thorax, narrowed behind the eyes and prolonged into a short neck; antennæ longer than the body and very slender; the scape and also the flagellum slightly thickened towards their apex. Head much wider than the thorax, the mandibles rufo-testaceous. Thorax: the prothorax elongate, prolonged into a neck, the meso- and metathorax divided by a deep strangulation, the metathorax with two minute upright spines. Abdomen ovate; the peduncle elongate, formed of two nodes, the first smaller than the second and less elevated, both having a short footstalk.

Hab. Borneo; Singapore. (Coll. W. W. Saunders, Esq.)

Species of Syria, Madeira, Cape of Good Hope, Port Natal, and Australia.—Sp. 49–55.

49. MYRMICA VENUSTA. B.M.

Worker. Length 1¼ line.—Head, antennæ, thorax, legs, and petiole of the abdomen, ferruginous; abdomen black, smooth and shining. Head oblong, very slightly emarginate behind; eyes and tips of the mandibles black. Thorax slightly narrowed behind, the division distinctly marked between the meso- and metathorax, the latter not spined. Abdomen ovate, truncated at the base.

Hab. Syria.

50. MYRMICA CARBONARIA. B.M.

Worker. Length 1 line.—Coal-black, smooth and shining: the antennæ and legs dark rufo-fuscous, scarcely black; the basal joints of the flagellum, the articulations of the legs and the tarsi, pale rufo-testaceous, the claw-joint of the tarsi darkest. Thorax about the same length as the head, with a deep strangulation between the meso- and metathorax, the latter truncate behind, not spined. Abdomen ovate, truncate at the base, pointed at the apex, the nodes elevated and rounded above.

Female. Length 2 lines.—Of the same colour as the worker, differing only in the sexual characteristics of length of thorax and abdomen.

Male. Length 2 lines.—Head and thorax opake black, the legs and abdomen shining; the clypeus, scutellum, and verge of the truncation of the metathorax, shining; wings colourless and iridescent, the costal nervure and stigma testaceous; abdomen oblong-ovate; the nodes of the petiole transverse, their upper margin subemarginate.

Hab. Madeira. (Coll. T. V. Wollaston, Esq.)

51. MYRMICA SUBOPACA. B.M.

Worker. Length 1¼ line.—Head, thorax, legs, and nodes of the petiole, dull rufo-testaceous; abdomen shining black, varying in depth of colour, small workers being sometimes pale red with the thorax black. The articulations of the legs and the tarsi pale rufo-testaceous, the head before the insertion of the antennæ and mandibles pale ferruginous; the metathorax with a longitudinal groove, not spined; the head and thorax smooth; the nodes of the petiole elevated, blunt above; abdomen ovate, truncate at the base, pointed at the apex.

Female. Length 2¼ lines.—Opake fusco-ferruginous; abdomen black, with the base reddish, the articulations of the legs and the tarsi pale rufo-testaceous; the thorax in the middle in front, and the scutellum, of a brighter red; the metathorax with a deep excavation; abdomen oblong-ovate, thinly sprinkled with short pale glittering hairs.

Hab. Madeira. (Coll. T. V. Wollaston, Esq.) Cape.

52. MYRMICA IRRITANS. B.M.

Worker. Length 1 line.—Pale rufo-testaceous: the head, excepting its mandibles and antennæ, the abdomen, excepting its base, being more or less rufo-fuscous; the femora and tibiæ in the middle are also darker than the other parts of the legs. Head wider than the thorax or abdomen, very smooth and shining;

eyes black and rather prominent. Thorax shining, deeply strangulated in the middle, the metathorax with two short erect acute spines. Abdomen ovate, very smooth and shining, with the base truncated.

Hab. Port Natal.

53. MYRMICA LONGICEPS. B.M.

Worker. Length 2 lines.—Dark rufo-piceous: the legs elongate and pale rufo-testaceous. Head oblong-ovate, the mandibles large, produced forwards in a line with the sides of the head; the face striated on each side before the eyes, the clypeus and vertex smooth and shining, the antennæ and legs long, slender, and pubescent. Thorax smooth and shining in front, deeply strangulated in the middle, the metathorax with two bent acute spines. The nodes of the peduncle and the abdomen, smooth, shining, and thinly sprinkled with long pale erect hairs.

Hab. Melbourne.

54. MYRMICA ADELAIDÆ. B.M.

Worker. Length 2½ lines.—Head, thorax, and nodes of the abdomen bright red; abdomen black, legs dark rufo-piceous. Head and thorax coarsely longitudinally striated, the striæ strongly punctured; the teeth of the mandibles black, the club of the antennæ 3-jointed, the flagellum 10-jointed. The femora incrassate in the middle, very slender at their base and apex, the articulations of the legs and the tarsi pale rufo-testaceous; the metathorax not spined. Abdomen ovate, covered with a very fine silky pile, and with a large ovate cream-coloured spot on each side at the base.

Hab. Adelaide.

Of this very conspicuous and beautiful species I have only seen the single specimen described: in the form of the thorax it differs from the majority of species, being somewhat flattened above, the margins raised and crenulated, the anterior margin rounded in the middle and curving on each side, forming a lateral, sharp, angular tooth; the division between the meso- and metathorax is very distinctly impressed.

55. MYRMICA FORMOSA.

Worker. Length 3 lines.—Black: the mandibles, antennæ, thorax, legs, and first node of the petiole, blood-red, the mandibles palest, and the scape and apex of the flagellum above, more or less fuscous. The head longitudinally striated, the prothorax with very coarse striæ diverging on each side from the centre; the

mesothorax longitudinally striated, the metathorax coarsely rugose, with the oblique apical portion transversely striated; the first node coarsely rugose, the second and the abdomen smooth and shining.

Hab. Adelaide. (Coll. F. Smith.)

Species of North America, Georgia, and California.—Sp. 56–66.

56. MYRMICA OPPOSITA.

Myrmica opposita, *Say, Bost. Journ. Nat. Hist.* i. 292. 3.

Hab. North America.

57. MYRMICA CORRUGATA.

Myrmica corrugata, *Say, Bost. Journ. Nat. Hist.* i. 291. 2 ♀ ♂.

Hab. North America (Indiana).

58. MYRMICA LINEOLATA.

Myrmica lineolata, *Say, Bost. Journ. Nat. Hist.* i. 290. 1.

Hab. United States.

59. MYRMICA INFLECTA.

Myrmica inflecta, *Say, Bost. Journ. Nat. Hist.* i. 292. 4 ♂.

Hab. North America (Indiana).

60. MYRMICA DIMIDIATA.

Myrmica dimidiata, *Say, Bost. Journ. Nat. Hist.* i. 293. 5.

Hab. North America.

61. MYRMICA MINUTA.

Myrmica minuta, *Say, Bost. Journ. Nat. Hist.* i. 294. 7.

Hab. North America (Indiana).

62. MYRMICA TRANSVERSA. B.M.

Worker. Length 3 lines.—Bright rufo-ferruginous: head large, subquadrate, wider than the thorax or abdomen. Head finely striated, with some coarser striæ before the eyes, slightly emarginate behind; the eyes, inner margins of the mandibles and the teeth, black. The prothorax longitudinally striated, the meso- and metathorax transversely so, the latter without spines; the legs sprinkled with pale glittering hairs. Abdomen very smooth and shining, the first node oblong, the second narrowed at the base.

Hab. North America.

63. MYRMICA BREVIPENNIS. B.M.

Male. Length 4½ lines.—Head and thorax black; antennæ, mandibles, legs, abdomen and second node of the petiole, ferruginous, the femora slightly dusky; wings fulvo-hyaline, shorter than the abdomen, with the nervures pale rufo-testaceous. Head and thorax with a fine longitudinal striation, and thinly clothed with long pale pubescence; the legs and abdomen pubescent. Head narrowed behind, and slightly emarginate; the sutures of the scutellum and post-scutellum ferruginous.

Hab. Georgia.

64. MYRMICA BARBATA.

Female. Length 5½ lines.—Ferruginous: the head finely striated longitudinally, smooth and shining beneath; the cheeks with a long beard of pale ferruginous hairs; mandibles very stout, strongly striated, their inner edge with a row of acute teeth, and a longer acute one at the apex. Thorax ovate, pubescent, the metathorax armed with two stout spines, and transversely striated; the wings hyaline, with a yellowish tinge towards their base, the nervures ferruginous, the stigma fuscous; the legs covered with short pale pubescence. Abdomen: the first node of the petiole roughened, the second transverse and smooth, the petiole with a tooth at its base beneath; the abdomen ovate, and, as well as the nodes, thinly sprinkled with pale pubescence.

Hab. Mexico. (Coll. F. Smith.)

65. MYRMICA BICARINATA.

Myrmica bicarinata, *Nyl. Addit. Adno. Mon. Form. Bor. Eur.* 1061.

Hab. California.

66. MYRMICA MOLESTA. B.M.

Myrmica molesta, *Say, Bost. Journ. Nat. Hist.* i. 293. 6 (1834).
Myrmica domestica, *Shuck. Mag. Nat. Hist.* 628 (1838).

Hab. North America.

For the synonyma of this species see the section of European species.

Species of Brazil and South America.—Sp. 67-75.

67. MYRMICA LUNDII.

Myrmica Lundii, *Guér. Voy. Coq. Zool.* ii. 206 ♀.

Hab. Brazil.

68. MYRMICA GLOBULARIA.

Worker. Length 1 line.—Pale rufo-testaceous, very smooth and shining, with a rufo-fuscous band on the first segment of the abdomen, the basal and apical margins pale. Head rather wider than the thorax or abdomen, the thorax strangulated in the middle, the metathorax without spines. The first node of the petiole compressed, its upper margin rounded; the second node large and globular, much larger than is usual in the genus.

Female. Length 1¾ line.—Rather darker red than the worker: the thorax oblong-ovate; the wings hyaline and beautifully iridescent; the nodes of the petiole of the same relative proportions as in the workers; abdomen oblong-ovate, rufo-fuscous, with the base and the apical margins of the segments pale rufo-testaceous.

Male. Length 1¼ line.—Jet-black, with the antennæ and legs pale testaceous; wings clear hyaline and beautifully iridescent.

Hab. Brazil. (Coll. F. Smith.)

69. MYRMICA CASTANEA. B.M.

Female. Length 3 lines.—Chestnut-red: head and thorax longitudinally striated, the scutellum smooth with a few punctures; the metathorax with two short spines, between which it is transversely striated; mandibles smooth and shining, with two stout teeth at the apex, and a few striæ at their outer margins. Abdomen smooth and shining, with the apical margins of the segments dusky.

Hab. Brazil (Ega).

70. MYRMICA BLANDA. B.M.

Worker. Length 1 line.—Head and thorax ferruginous; abdomen black or brownish-black, with the apex rufo-testaceous. The head, thorax, and nodes of the abdomen finely rugose: the roughness is occasioned by the excessive closeness of the punctures; the club of the antennæ 3-jointed; the legs rather paler than the thorax; the thorax convex and rounded in front, narrowed posteriorly, with two acute spines on the metathorax. The abdomen very smooth and shining.

Hab. Brazil (Ega).

71. MYRMICA VIRULENS. B.M.

Worker. Length 2 lines.—Pale reddish-yellow, very smooth and shining, and thinly sprinkled with erect pale hairs: the club 2-jointed; the vertex faintly depressed in the middle. Thorax deeply strangulated in the middle, the prothorax depressed in the middle. Abdomen: the first node incrassate, rounded above, less elevated and smaller than the second, subglobose.

Hab. Brazil (Ega).

This species is allied to *M. sævissima*. Mr. Bates says, "It is found only in the forest: its formicarium is in the earth, under vegetable debris. Its sting is still more painful than that of *M. sævissima*."

72. MYRMICA TRISTIS. B.M.

Worker. Length 1½ line.—Reddish-brown, opake: the eyes small, black and prominent; the flagellum slightly fuscous with the tip pale, the club 3-jointed. Thorax much narrower than the head, deeply strangulated in the middle; the metathorax with two short upright spines; the tibiæ and femora slightly dusky in the middle. Abdomen small and ovate; the first node of the petiole conical, the second globose.

Hab. Rio Janeiro (Tejuca). (Coll. Rev. Hamlet Clark.)

73. MYRMICA LYNCEA.

Myrmica lyncea, *Spin. Faun. Chili*, vi. 241. 1 ☿.

Hab. Chili.

74. MYRMICA GAYI.

Myrmica Gayi, *Spin. Faun. Chili*, vi. 242. 2 ☿.

Hab. Chili.

75. MYRMICA RUSSULA.

Myrmica russula, *Nyland. Form. Fr. et d'Algér.* 82.

Hab. St. Domingo. (Coll. Dr. Sichel, Paris.)

Genus 2. MYRMECINA.

Myrmecina, *Curtis, Brit. Ent.* vi. fol. 226.

Myrmica, pt., *Nyland. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 40.

Antennæ 12-jointed in the female, the club consisting of 3 joints. Maxillary palpi 4-jointed; labial palpi 3-jointed. An-

terior wings with one complete marginal cell, and one submarginal, the discoidal cells obsolete. The metathorax spined in the female and worker. The clypeus bidentate.

1. MYRMECINA LATREILLII. Pl. IX. figs. 8–12. B.M.

Myrmecina Latreillii, *Curtis, Brit. Ent.* vi. 265 ♂; *Trans. Linn. Soc.* xxi. 218. t. 23. f. 22 ☿.
Smith, Brit. Form. 132. 1.
Mayr. Form. Austr. 149. 1; *Ungar. Ameis.* 18. 1.
Myrmica striatula, *Nyl. Addit. Alt. Mon. Form. Bor. Eur.* 40. 7; *Form. Fr. et d'Algér.* 96. 24.
Myrmica bidens, *Foerst. Hym. Stud. Form.* 50. 24.
Schenck, Beschr. Nass. Ameis. 94.
Myrmica graminicola, *Foerst. Hym. Stud. Form.* 58. 30.

Hab. Europe.

2. MYRMECINA PILICORNIS.

Male. Length 1½ line.—Pale rufo-testaceous, smooth and shining: the antennæ and legs white; the head with a dusky spot on the vertex, enclosing the ocelli, which are placed in a curve, the posterior pair on the extreme margin of the vertex; eyes large, placed anteriorly on the sides of the head, which is widest in front; the antennæ tapering to the apex, very pubescent. Thorax: the wings milky-white, their margins fringed with pubescence. The abdomen more or less fuscous.

Hab. India (Bombay). (Coll. East India House.)

3. MYRMECINA GRATIOSA. B.M.

Worker. Length 4 lines.—Head, thorax, legs, and nodes of the petiole, ferruginous; abdomen smooth, shining black. Head large, wider than the thorax or abdomen, longitudinally striated, the striæ stronger and more deeply impressed on the anterior portion of the face; the mandibles triangular, striated, and armed with strong black teeth on their inner margin. Thorax: its margins raised, the lateral angles of the anterior margin produced and acute; the disk longitudinally striated, with a deep strangulation between the meso- and metathorax, the latter coarsely rugose, and having on each side a short blunt tooth; the sides of the mesothorax have also a sharp angle or tooth at their margins at the verge of the strangulation, before which the sides are rounded; the femora very much thickened in the middle and much attenuated at their base and apex, the tibiæ slightly incrassate; the legs very smooth and shining with the tarsi deep

ferruginous. Abdomen ovate, narrowed at the base; which is slightly rufous; the nodes of the petiole rugose, the first elongated, the second subglobose; the first node is produced in the middle above into a short acute spine, and it has also a spine at its base beneath.

Female. Length 6¼ lines.—Of the same colour as the worker: the head rather more elongate-quadrate; the thorax elongate-ovate, sculptured as in the worker; wings subhyaline, the nervures pale rufo-testaceous, the stigma fuscous; the femora swollen as in the worker; the basal node is raised in the middle to a sharp transversely rounded edge, not spined; beneath, at its base, is a flattened acute tooth: otherwise like the worker.

Hab. Australia (Adelaide).

This fine species is placed provisionally in the genus *Myrmecina*: a dissection of the parts of the mouth would determine that question; it is however closely allied to that genus, if not belonging to it; the neuration of the wings only differs in their anterior pair having the cubital vein and also the subdiscoidal vein continued to the apical margin of the wing.

Genus 3. STRONGYLOGNATHUS.

Eciton, *Schenck, Beschr. Nass. Ameis.* 117 (1852).
Myrmus, *Schenck, Ent. Zeit.* 299 (1853).
Strongylognathus, *Mayr. Form. Austr.* 159 (1855).

Maxillary palpi 4-jointed, labial palpi 3-jointed. Anterior wings with one incomplete marginal cell, one submarginal and one discoidal cell. Mandibles narrow, arcuate, smooth, and with the apex acute. Antennæ of worker 12-jointed, the club consisting of 3 joints.

1. STRONGYLOGNATHUS TESTACEUS.

Eciton? testaceus, *Schenck, Beschr. Nass. Ameis.* 117.
Myrmus emarginatus, *Schenck, Ent. Zeit.* 299.
Strongylognathus testaceus, *Mayr. Form. Austr.* 158; *Ungar. Ameis.* 20. 1.
Nyl. Form. Fr. et d'Algér. 101. 1.

Hab. Europe; France; Austria.

Genus 4. CREMATOGASTER.

Formica, pt., *Oliv. Encycl. Méth.* vi. 497 (1791).
Myrmica, pt., *Latr. Hist. Nat. Fourm.* 261 (1804).

Crematogaster, *Lund, Ann. Sc. Nat.* xxvii. (1831).
Acrocœlia, *Mayr. Ein. neue Ameis.* 143 (1852).

Maxillary palpi 5-jointed, labial palpi 3-jointed. Antennæ 11-jointed, the club 3-jointed. Anterior wings with one marginal cell, incomplete; one complete submarginal, and one discoidal cell. Abdomen cordate, the petiole attached to the upper surface of its base.

The insects belonging to this genus of Ants construct their nests on the branches of trees, suspending them in the same way as Wasps, to the nests of which they have a close resemblance; on removing the outer covering, however, they exhibit a very different construction, being composed of multitudinous, curved, intricate ramifications, all leading to the interior chambers and galleries. From the close resemblance which the nests have to a wig, they have probably acquired the popular name of the Negro-head, by which they are generally known in the Brazils. The insects are readily known in consequence of the abdomen being usually heart-shaped, and the peduncle by which it is attached to the thorax being inserted at the top of the basal segment, instead of beneath, as it is in all the other genera of Ants. These insects are described by observers as having a remarkable appearance when running about, as at such times they curve the abdomen upwards, so that it partly overhangs the thorax behind.

1. Crematogaster scutellaris. Pl. IX. fig. 7. B.M.

Formica scutellaris, *Oliv. Encycl. Méth.* vi. 497. 32.
Latr. Hist. Nat. Fourm. 261.
Myrmica Rediana, *Duf. Rech. Anat. Hym. Mém. Ac. Sc.* vii. 477.
Géné, Mém. Soc. Ital. Sc. Pt. fis. xxiii.
Myrmica Algirica, *Lucas, Expl. Sc. de l'Algér.* iii. 300. pl. 16. f. 9.
Myrmica rubriceps, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 44.
Acrocœlia rubriceps, *Mayr. Ein. neue Ameis. in Verhandl. des zool.-bot. Vereines in Wien*, Band ii. 1852.
Acrocœlia Schmidti, *Mayr. Ein. neue Ameis. in Verhandl. des zool.-bot. Vereines in Wien*, Band ii. 1852.
Crematogaster scutellaris, *Mayr. Form. Austr.* 197. 1.
Myrmica scutellaris, *Nyl. Form. Fr. et d'Algér.* 100. 28.

Hab. Europe; France; Austria; Switzerland; Tuscany; Sardinia; Hungary; Dalmatia.

2. Crematogaster sordidulus. Pl. IX. figs. 4—6. B.M.

Myrmica sordidula, *Nyl. Addit. Alt. Mon. Form. Bor. Eur.* 44; *Form. Fr. et d'Algér.* 101.

Acrocœlia Mayri, *Schmidt, Mayr. Beitr. zur Kenntn. der Ameis.* p. 14.
Crematogaster sordidula, *Mayr. Form. Austr.* 200.
Hab. Europe (France; Austria); Dalmatia.

3. CREMATOGASTER CASTANEUS. Pl. IX. fig. 2. B.M.

Worker. Length 2 lines.—Head and thorax rufo-ferruginous; abdomen brownish-black, with the base obscure rufo-fuscous. The head, seen above, rotundate, scarcely shining; the thorax deeply constricted at the base of the metathorax, which is armed with two diverging acute spines; the legs ferruginous, the tibiæ and tarsi darkest. Abdomen: the first node of the petiole, viewed in front, heart-shaped, the pointed end upwards; the second node globose, with a deep longitudinal incision above.

Female. Length 4 lines.—Rufo-ferruginous, smooth and shining: the thorax with a central and two lateral longitudinal rufo-fuscous stripes, the metathorax not spined; wings hyaline, the nervures testaceous. Abdomen oblong, the apical margins of the segments fuscous, and slightly depressed and thinly sprinkled with short cinereous pubescence.

Hab. Albania.

4. CREMATOGASTER KIRBII.

Myrmica Kirbii, *Sykes, Trans. Ent. Soc.* i. 99. t. 13. f. 2 ♀, 3 ♂, and f. 1. nest.
Jerdon, Madr. Journ. Lit. & Sc. 114; *Ann. & Mag. Nat. Hist.* new ser. xiii. 55. 20.

Hab. India (Poona, and forests of the Wynaad).

5. CREMATOGASTER ANTHRACINUS. B.M.

Worker. Length 1¼ line.—Jet-black, smooth and shining: the face with a few delicate striæ, the extreme base of the scape and the apex of the flagellum pale testaceous. Thorax flattened above, opake and finely rugose; the metathorax armed on each side with an acute spine; the tarsi pale testaceous, the claw-joint darkest. Abdomen heart-shaped, smooth, shining and impunctate.

Hab. Singapore.

6. CREMATOGASTER INFLATUS. Pl. IX. fig. 1. B.M.

Worker. Length 2½ lines.—Black, smooth and shining: the antennæ dark rufo-piceous; the mandibles ferruginous, striated, with their teeth black; the eyes small and lateral, placed about

the middle at the sides of the head. Thorax: the anterior margin rounded, the posterior portion forming a semi-transparent bladder-like swelling, with a deep longitudinal depression in the middle; the inflated part not quite so wide as the head; the apical joints of the tarsi rufo-testaceous. Abdomen heart-shaped; the peduncle, base and apical margin of the first segment obscurely rufo-piceous.

Hab. Singapore; Borneo (Sarawak).

7. CREMATOGASTER DIFFORMIS. B.M.

Worker. Length 2¼ lines.—Black: the head twice as wide as the thorax; the tips of the mandibles and the apical joints of the flagellum dark ferruginous; the head smooth and shining; the eyes small, placed about the middle at the sides of the head. Thorax: the anterior margin rounded, the metathorax greatly dilated, with a deep excavation behind; the legs stout, with their articulations and the tarsi ferruginous. Abdomen heart-shaped, with the base, in some examples, slightly ferruginous.

Worker minor only differs in being one-third smaller.

Hab. Borneo (Sarawak); Singapore.

8. CREMATOGASTER OBSCURUS.

Worker. Length 1¼ line.—Dull testaceous, smooth and shining: the base of the scape and of the flagellum, as well as the clypeus and mandibles, pale testaceous; the head smooth and shining. Thorax rounded in front, and having a central longitudinal channel, deeply strangulated in the middle; the metathorax subquadrate, with short spines at the posterior angles; the tips of the joints of the legs and the tarsi pale testaceous. Abdomen heart-shaped.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

9. CREMATOGASTER CEPHALOTES.

Worker. Length 1–1¼ line.—Testaceous: head very large, smooth and shining; the antennæ, clypeus and mandibles pale testaceous. Thorax deeply constricted in the middle, rugose in front, with a smooth shining space before the constriction; the metathorax deeply excavated, having on each side an acute spine; the tibiæ and tarsi pale testaceous. Abdomen heart-shaped; the basal node flattened anteriorly, with the sides angulated, the second node globose.

Worker minor.—Differs in having the head proportionably smaller, the thorax being smooth and shining above.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

10. CREMATOGASTER BRUNNEUS.

Worker. Length 2 lines. — Reddish-brown, smooth and shining: head wider than the thorax, the vertex slightly emarginate. Thorax: the disk concave and finely striated longitudinally; the metathorax deeply concave, and furnished on each side with a stout acute spine; the legs with the tips of the joints and the tarsi pale testaceous. Abdomen heart-shaped, smooth and shining; the first node of the peduncle heart-shaped, flattened above, the second globose and bituberculate above.

Worker minor.—One-third smaller, and of a paler colour.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

11. CREMATOGASTER ARBOREUS. Pl. XIV. *Nest.* B.M.

Worker. Length 2 lines.—Pale ferruginous, with very thinly scattered short glittering hairs: the head subovate, slightly emarginate behind, delicately striated longitudinally, the mandibles with four strong acute teeth; the antennæ, tarsi, and apex of the abdomen more or less fuscous. Thorax flattened on the disk, deeply strangulated between the meso- and metathorax, with the latter armed with two acute spines. Abdomen: the first node of the peduncle, viewed in front, pear-shaped, with the broad end downwards; the second node ovate, with a deeply impressed line above.

Hab. Port Natal.

The nest of this species, of which a figure is given, was sent to England by Herr Gueinzius from Port Natal: a number of specimens of the insect were found in the crevices and entrances to the nest; many individuals are of a paler colour than the one described, but all are of the same size, sex, and form.

12. CREMATOGASTER LÆVICEPS. B.M.

Worker. Length 2 lines.—Obscure fusco-ferruginous, the antennæ and legs rather paler than the head and thorax: abdomen very dark, nearly black. The head and the mesothorax smooth and shining, the metathorax with a few delicate striæ at its base, its apex armed on each side with a stout acute spine; a deep strangulation between the meso- and metathorax. The first node of the peduncle, viewed in front, is broad and rounded at the base, narrowed upwards, its apex obtuse; the second node subglobose, with a deep longitudinal impression above; a few pale hairs scattered over the abdomen; the head, thorax, and base of the abdomen, pale rufo-testaceous beneath.

Hab. Australia (Melbourne).

A mutilated specimen of a female was received with the worker: it is of much paler colour, but is equally smooth and shining, the thorax and abdomen being elongate-ovate; the wings yellowish and subhyaline, with the nervures pale rufo-testaceous.

13. CREMATOGASTER LIMATUS. B.M.

Worker. Length 1¼ line.—Rufo-testaceous: the abdomen very dark blackish-brown, except at the base, which is paler; the tarsi and articulations of the legs very pale testaceous, nearly white. The body entirely smooth and shining; the thorax deeply strangulated in the middle, the metathorax with two slender acute spines; the nodes of the peduncle clavate, the basal one longest; the abdomen heart-shaped.

Female. Length 2¾ lines.—Of the same colour as the worker, but with the legs and the mandibles entirely pale. This sex differs from the worker in having the eyes larger and more prominent; the thorax ovate, and the spines on the metathorax short; in having wings, which are colourless, with the nervures pale testaceous: the nodes of the abdomen differ in form from those of the worker; the first node is clavate, with the upper apical margin emarginate, the lateral angles subdentate, the second node globose; abdomen as in the worker.

Male. Length 1½ line.—Body entirely testaceous, with the antennæ and legs very pale; wings colourless and beautifully iridescent, the nervures pale testaceous; the form of the thorax and abdomen very similar to that of the female, but the head is much smaller and narrowed behind, with the eyes very prominent.

Hab. Brazil (Ega).

Mr. Bates says of this species, "The formicarium is in perforated glandular swellings in suspended air-roots of a parasitic plant. I have never found Coleopterous parasites in the nests of any species of this genus."

14. CREMATOGASTER MONTEZUMIA. Pl. I. fig. 1. *Nest.* B.M.

Worker. Length 1¼ line.—Obscure brown-black, opake; the abdomen shining black. Head, seen above, rotundate, eyes rather prominent. Thorax deeply strangulated between the meso- and metathorax, the latter widely and deeply excavated, with a short acute spine on each side. The first node of the peduncle, viewed in front, is oblong; the second subglobose, with a deeply impressed line above: the insect is thinly sprinkled with long glittering white hairs.

Female. Length $1\frac{2}{3}$ line.—Usually of a darker colour than the worker, nearly black: the wings slightly fuscous and subopake, the nervures pale testaceous; the metathorax armed with sharp spines; the basal node of the petiole oblong, with the angles prominent, the second node transverse and deeply notched in the middle: sprinkled with white hairs like the worker.

Male. Length $1\frac{1}{4}$ line.—Of the same colour as the worker: the head transverse; the eyes prominent, as well as the ocelli, which are placed wide apart on the vertex, the anterior one larger than the posterior pair. Thorax ovate, not spined. Abdomen closely resembling that of the worker.

Hab. Mexico.

15. CREMATOGASTER VICTIMA. B.M.

Worker. Length 1 line.—Pale rufo-testaceous: the head usually rather darker than the thorax, the abdomen rufo-fuscous with the base palest. The head smooth and shining; the thorax slightly roughened anteriorly, the lateral margins raised, the metathorax armed with two acute spines, a deep strangulation between the meso- and metathorax; the abdomen thinly sprinkled with long pale hairs.

Hab. Brazil (Santarem).

16. CREMATOGASTER QUADRICEPS. B.M.

Worker. Length 2 lines.—Jet-black, with the antennæ and articulations of the legs obscurely rufo-piceous: the head, viewed in front, nearly quadrate, with the hinder angles rounded; the anterior margin of the face nearly straight, the mandibles ferruginous at their apex; the head rugose, with the clypeus smooth and shining. Thorax rugose, the metathorax armed with two long acute spines; the tarsi rufo-testaceous. Abdomen: the first node oblong, the second subovate; the apex of the abdomen very acute.

Hab. Brazil (Ega).

Genus 5. MYRMICARIA.

Myrmicaria, *Saund. Trans. Ent. Soc. Lond.* iii. 57.

This genus of Ants is founded on characters derived from males only: in all probability the genus *Physatta*, the characters of which are derived from females, may prove to be the other sex of *Myrmicaria*; specimens of both genera have been received from India, Java, and Port Natal, but it appears desirable to keep them

separate until further information is obtained; in the genus *Myrmicaria*, the antennæ are 13-jointed, those of *Physatta* being 7-jointed; the labial and maxillary palpi 3-jointed.

1. MYRMICARIA BRUNNEA. Pl. X. figs. 6–8. B.M.

Myrmicaria brunnea, *Saund. Trans. Ent. Soc. Lond.* iii. 57. pl. 5. f. 2 ♂.

Hab. India.

2. MYRMICARIA VIDUA.

Male. Length 6 lines.—Brown-black, pubescent: antennæ reaching to the apex of the first node of the peduncle; mouth reddish-brown. Head rugose; the thorax longitudinally rugose on the disk; wings hyaline at the base, tinged with brown towards their apex; the nodes of the abdomen finely roughened, with a longitudinal narrow smooth line; the abdomen heart-shaped, smooth and shining, the head and thorax opake.

Hab. Java. (Coll. East India House.)

This species differs from *M. brunnea* in the coarser sculpture of the thorax; the nodes of the abdomen are much broader, and are also roughened and very pubescent.

3. MYRMICARIA TIGREENSIS. B.M.

Myrmica tigreensis, *Guér. Voy. Abyss.* (*Lefeb.*) vi. 351. pl. 7. fig. 7.

Hab. Port Natal.

Genus 6. HEPTACONDYLUS, *Smith.*

Head suborbiculate, wider than the thorax; eyes lateral and ovate; the stemmata placed in a triangle on the vertex; antennæ geniculated, filiform, the scape nearly as long as the flagellum, placed forwards on the head at the base of the clypeus; *the flagellum 6-jointed*, the joints clavate, except the apical one, which is cylindrical; the labial palpi 3-jointed, the maxillary palpi 3-jointed. Thorax ovate, gibbous; the scutellum very prominent; the metathorax armed with two acute spines (in the female), compressed and strangulated (in the workers); the *superior wings* with one marginal and one complete submarginal cell, the submarginal cell receiving the recurrent nervure; the superior angle of the discoidal cell touching the costal nervure. Abdomen ovate; the peduncle composed of two nodes.

This genus presents a remarkable deviation from the general

rule, as exemplified in the aculeate Hymenoptera; thus the normal number of joints in the antennæ of the females being 12, and 13 in the males, as a general rule, serves to discriminate the sexes: the workers also have usually 12-jointed antennæ, but in the present genus both the female and worker have only 7 joints. The genus *Orectognathus* has only 5 joints in the antennæ, but only workers are known. In *Heptacondylus*, however, the female has the same reduced number of joints as the worker, and this must be considered the perfect condition of the species.

1. HEPTACONDYLUS SUBCARINATUS. B.M.

Worker. Length 2½ lines.—Head, antennæ, thorax and legs, ferruginous, or pale ferruginous; abdomen fuscous, or rufo-fuscous, the petiole of the basal node pale; head shining, and having a number of short, irregular, delicate carinæ on the front and vertex; there are also a few irrregular striæ in front of the eyes. Thorax: the sides compressed, widest in front, the superior surface slightly convex, and having a number of longitudinal, abbreviated, slightly elevated carinæ, the lateral margins traversed by a slight carina; the metathorax with two stout acute spines. Abdomen smooth and shining; the insect sprinkled with a number of pale erect hairs, most numerous on the antennæ and legs.

Hab. Borneo (Sarawak).

2. HEPTACONDYLUS CARINATUS. B.M.

Worker. Length 2⅓ lines.—Dark fusco-ferruginous: closely resembling *H. subcarinatus*, but with thicker antennæ and the joints shorter; the scape distinctly shorter, and not so slender at the base; the head proportionately larger, and much more strongly carinated; the thorax roughly carinated, and having longer and stouter spines; in other respects resembling *H. subcarinatus*.

Hab. Borneo (Sarawak).

Whether this can possibly be a form of *H. subcarinatus*, it is impossible to determine; the various differences pointed out appear to distinguish a distinct species.

3. HEPTACONDYLUS LONGIPES. B.M.

Worker. Length 2¾ lines.—Dark rufo-fuscous: the antennæ, head beneath, mandibles and lower part of the face, pale rufo-testaceous; antennæ much more slender and elongate than either of the preceding species. Head smooth and shining, not carinated. Thorax smooth and shining, the lateral margins traversed

by a sharp carina; the metathorax elevated, armed with two acute spines; the legs elongate and slender; the coxæ beneath, the base and apex of the femora and tibiæ, and the tarsi, pale ferruginous. Abdomen smooth and shining, the apex pale ferruginous.

Hab. Borneo (Sarawak).

Very distinct from either of the preceding species, and distinguished by its elongate legs and antennæ.

Genus 7. MYRMECIA.

Formica, pt., *Fabr. Ent. Syst.* ii. 363 (1793).
Myrmecia, *Fabr. Syst. Piez.* 423 (1804).

Mandibles elongate, porrect, serrated on the inner edge alternately with large and small teeth, tips curved inwards and acute at the apex; maxillary palpi 6-jointed, the labial palpi 4-jointed; antennæ filiform, as long as the head and thorax; eyes large, ovate, prominent, situated forwards at the sides of the head, nearly touching the base of the mandibles; ocelli present in all the sexes. Thorax elongate; anterior wings with one complete marginal, three complete submarginal, and two discoidal cells. Abdomen with two ovate nodes in the petiole. Pupæ enclosed in cocoons.

This genus of Ants appears to be confined to the continent of Australia and to Tasmania.

1. MYRMECIA GULOSA. B.M.

Formica gulosa, *Fabr. Syst. Ent.* 395 ☿; *Spec. Ins.* i. 494. 34; *Ent. Syst.* ii. 363. 55.
Oliv. Encycl. Méth. vi. 501. 50.
Latr. Hist. Nat. Fourm. 215. pl. 8. f. 49.
Myrmecia gulosa, *Fabr. Syst. Piez.* 424. 2.
Myrmica gulosa, *Guér. Voy. Coq.* ii. 206.

Hab. Australia.

The male of this species differs from the other sexes, principally in having the antennæ nearly as long as the body, the scape very short, the head compressed, the eyes and ocelli very prominent; it is about the same size as the other sexes.

2. MYRMECIA FORFICATA. B.M.

Formica forficata, *Fabr. Ent. Syst.* ii. 363. 56.
Oliv. Encycl. Méth. vi. 501. 51.

Myrmecia forficata, *Fabr. Syst. Piez.* 424. 3; *& Cab. Banks. Mus. Linn. Soc.*

Hab. Tasmania.

3. MYRMECIA SIMILLIMA. B.M.

Worker. Length 7 lines.—This species is very like *M. forficata*, of which possibly it may be a variety; but it is more coarsely sculptured; the striation is longitudinally divergent on the prothorax, and irregularly roughened transversely on the meso- and metathorax; in *M. forficata* the prothorax has a regular transverse curved striation, that on the mesothorax and scutellum being regularly striated *longitudinally*; this difference in striation appears to characterize a distinct species.

Hab. Australia.

4. MYRMECIA PYRIFORMIS. Pl. X. figs. 1–6. B.M.

Worker. Length 8½–9 lines.—Black, with an obscure tinge of red: the anterior part of the face and the mandibles ferruginous; the legs obscure ferruginous, with the tarsi brighter, varying in different individuals in brightness; the abdomen shining black, the nodes nearly black. Head longitudinally rugose; the prothorax with a transverse rugose striation, the rest of the thorax transversely striated; the first node of the abdomen rugose.

Female. Length 10 lines.—Of the same colour as the worker: differing only in having the thorax oblong-ovate, not strangulated in the middle, and with the mesothorax and scutellum rugose-striate; wings hyaline, nervures pale rufo-testaceous.

Male. Length 8 lines.—Black, with the antennæ, mandibles and tarsi ferruginous; the head and thorax densely pubescent, the pubescence pale and glittering. Abdomen with a fine grey pile, and a thinly scattered pale pubescence; the thorax wider than the head, which is narrowed posteriorly; the antennæ as long as the head, thorax and nodes of the abdomen.

Hab. Australia (Melbourne; Hunter River).

This species very closely resembles the *M. forficata*, but is certainly distinct, if the sexes are correctly assimilated, and all being taken at the same time and place render it probable; all the sexes are larger than those of *M. forficata*; the male is strikingly distinct, and the head of the worker and female is of a squarer form and not narrowed behind.

5. MYRMECIA VINDEX. B.M.

Worker. Length 7 lines.—Ferruginous, with the abdomen

black; the nodes of the petiole ferruginous; the sculpture nearly the same as in *M. sanguinea*; the mandibles are, however, longer, more strongly toothed, and of a pale yellow colour; the nodes of the petiole are more elongate, and the petiole of the first node is longer and more slender; the insect is of a duller red than *M. sanguinea*; the head sometimes fuscous-red.

Hab. West Australia.

6. MYRMECIA TARSATA. B.M.

Worker. Length 8–9½ lines.—Black: the mandibles, antennæ and tarsi pale reddish-yellow; abdomen smooth and shining black, with a greenish tint. Head longitudinally rugose; the prothorax with a divergent rugose striation, that on the meso- and metathorax coarse and transverse; on the first node of the petiole it is longitudinal; the three apical segments of the abdomen pale rufo-testaceous.

Hab. Australia (Hunter River, &c.).

7. MYRMECIA RUFINODIS. B.M.

Worker. Length 7 lines.—Black: the antennæ, mandibles, tarsi and anterior tibiæ, as well as the articulations of the legs, ferruginous; the nodes of the petiole bright ferruginous. Head longitudinally rugose; the striation on the thorax transverse, that on the prothorax curving round the sides. The first node of the petiole subrugose, the second smooth and shining; the margins of the apical segments of the abdomen pale testaceous.

Hab. Adelaide.

8. MYRMECIA MANDIBULARIS. B.M.

Worker. Length 5 lines.—Black and shining: head quadrate and longitudinally striated; mandibles straight, with a slight bend at their base, of nearly equal width throughout, convex above, flattened beneath, obliquely truncate, forming a bent tooth at the apex; the inner edge with three or four teeth. Thorax: the pro-, meso- and metathorax above, much more strongly striated longitudinally than the head; the metathorax transversely striated behind; the apical joints of the tarsi ferruginous. Abdomen: the first node of the petiole, viewed sideways, is quadrate; above, it is convex, widest behind, and coarsely rugose; the second node subglobose, and longitudinally and finely striated, the abdomen densely clothed with ferruginous pubescence.

Hab. Adelaide.

9. MYRMECIA PILOSULA. B.M.

Worker. Length 4¼ lines.—Black: covered with a fine, short, silky, ashy pile; the head quadrate, with the angles rounded, longitudinally striated, the striæ irregular, running into one another; the prothorax with striæ diverging from the centre; the striæ on the meso- and metathorax above are longitudinal, but on the oblique truncation they are transverse; the nodes of the peduncle globose, the first rugose, and with a short thick petiole. The mandibles, antennæ, tibiæ, tarsi, apical half of the anterior femora, and tips of the intermediate and posterior pairs, pale rufo-testaceous.

Female. Length 5 lines.—Of the same colour as the worker, similarly pilose: the thorax broader and more coarsely sculptured; the first node of the petiole transversely and coarsely rugose, with a central longitudinal carina.

Male. Length 3½ lines.—Resembles the other sex, but has the antennæ, tibiæ and tarsi dark obscure testaceous; it is altogether more coarsely rugose, not distinctly striate; the first node of the petiole rugose and carinated as in the female.

Hab. Australia; Tasmania.

10. MYRMECIA PILIVENTRIS.

Worker. Length 6 lines.—Black: the abdomen covered with pale golden pubescence; mandibles porrect, nearly straight, rounded above, longitudinally grooved beneath, somewhat obliquely truncate at the apex, the tip slightly bent, the inner edge with a few minute teeth directed backwards. The head longitudinally striated, the thorax very coarsely so, the striation on the metathorax transverse. Abdomen: the basal node coarsely rugose, with a longitudinal central carina beneath, terminating in a strong tooth at the base.

Hab. Australia. (Coll. F. Smith.)

11. MYRMECIA PICTA. B.M.

Worker. Length 4–5 lines.—Black: the mandibles and face before the insertion of the antennæ pale reddish-yellow; the anterior legs entirely, and the intermediate and posterior femora and tibiæ ferruginous, the posterior femora more or less dusky; the head and thorax opake, with a thin cinereous pile; the head substriate; the carinæ between the antennæ extending to the anterior ocellus; the posterior margin of the head emarginate. The first node of the peduncle fusco-ferruginous, subglobose and rugose. Abdomen slightly shining, with a thin cinereous pubescence.

Female. Length 5 lines.—Head as in the worker; the meso- and metathorax ferruginous above and at the sides; the legs ferruginous, with the intermediate and posterior coxæ black; the posterior femora towards the apex and the base of the tibiæ fuscous; the nodes of the petiole ferruginous, the second node fuscous above. Abdomen slightly shining, and thinly covered with cinereous pile and pubescence.

Hab. Adelaide.

This is a very marked and distinct species; only two specimens have been received.

12. MYRMECIA CRUDELIS. B.M.

Worker. Length 7 lines.—Black: the clypeus and mandibles yellow, with the teeth and apex of the latter ferruginous; the antennæ and tarsi pale ferruginous; the femora and tibiæ dark rufo-piceous; the head longitudinally rugose. Thorax with obscure ferruginous tints, the prothorax with a curved transverse striation, the meso- and metathorax transversely and coarsely striated. The first node of the petiole slightly roughened, the second and the abdomen smooth and shining.

Female.—This sex only differs in the usual sexual characters, the thorax being elongate-ovate, and not strangulated in the middle.

Hab. Adelaide.

13. MYRMECIA NIGROCINCTA. B.M.

Worker. Length 5 lines.—Black: the mandibles, antennæ, thorax and basal node of the peduncle, ferruginous; the meso-thorax black, obscurely reddish beneath; the legs dark rufo-piceous, with the tarsi and front of the anterior tibiæ ferruginous. The head finely longitudinally rugose; the prothorax with a central longitudinal depression on the disk, and very finely sculptured with a curved transverse striation, which passes obliquely down the sides; the meso- and metathorax very finely striated transversely, the latter with an elongate depression in the middle above; both the nodes smooth and shining; the second node with some obscure ferruginous tints. Abdomen shining, and covered with a fine, silky, cinereous pile, the apex sprinkled with a few long pale hairs.

Hab. Australia.

14. MYRMECIA TASMANIENSIS. B.M.

Worker. Length 6 lines.—Black: the mandibles, antennæ,

legs, and second node of the petiole, ferruginous. The head longitudinally rugose, not striated; the prothorax rugose, the rugosity running in a transverse curved direction; the meso- and metathorax transversely rugose; the first node of the peduncle subglobose and coarsely rugose, the second node smooth and shining, with a few scattered punctures; the abdomen smooth and shining, the apical margins of the first and second segments and the whole of the other segments ferruginous.

Hab. Tasmania.

15. MYRMECIA SANGUINEA.

Worker. Length 6–9 lines.—Blood-red: the abdomen black; the head longitudinally rugose-striate, not coarsely so. The prothorax with striæ diverging from the centre, that on the meso- and metathorax transverse; a deep strangulation between the meso- and metathorax; the first node of the petiole more or less rugose, both blood-red.

Hab. Tasmania. (Coll. F. Smith.)

Genus 8. ECITON.

Formica, pt., *Fabr. Ent. Syst.* ii. 364 (1793).
Myrmecia, pt., *Fabr. Syst. Piez.* 423 (1804).
Eciton, *Latr. Hist. Nat. Crust. et Ins.* iv. 130 (1804).
Ancylognathus, *Lund, Ann. Sc. Nat.* xxii. (1831).
Camptognatha, *Westw. Griff. An. Kingd.* xv. 5. 16 (1832).

The maxillary palpi 2-jointed, the labial palpi 3-jointed. The societies comprise males, females and workers, the latter consisting of two kinds of individuals, the larger kind in some species having the mandibles elongate, curved, somewhat sickle-shaped, but not flattened, the head very large; the large and small workers with very minute eyes, in some species obsolete. Thorax unarmed. Abdomen small and ovate, the petiole with two nodes; the workers armed with a sting.—Males and females not known. Pl. VI.

1. ECITON HAMATA. Pl. VI. figs. 5, 6, 8. B.M.

Formica hamata, *Fabr. Ent. Syst.* ii. 364. 58 (worker major).
Latr. Hist. Nat. Fourm. 242. pl. 8. f. 54.
Myrmecia hamata, *Fabr. Syst. Piez.* 425. 6.
Eciton hamata, *Latr. Gen. Crust. et Ins.* iv. 129.
Smith, Trans. Ent. Soc. Lond. iii. new ser. 16. 1.
Formica curvidentata, *Latr. Hist. Nat. Fourm.* 269 (worker minor).

Eciton curvidentata, *Smith, Trans. Ent. Soc. Lond.* iii. new ser. 162. 3.

Hab. Brazil (Para); Cayenne.

Latreille's species are united on the authority of Mr. H. W. Bates, who says, "I have observed its legions in processions of great extent, but up to the present time I have been unable to meet with the other sexes; their societies are so numerous and the sting of the insects so severe, that an attack on one of their colonies is not to be rashly undertaken."

2. ECITON DREPANOPHORUM. B.M.

Worker major. Length 4–4½ lines.—Reddish-yellow, with the head pale testaceous yellow, smooth and shining; very closely resembling *E. hamata*, but with the scape of the antennæ ferruginous: in *hamata* the antennæ are entirely black; the head more narrowed behind, the eyes black, and differing also in having the second node of the abdomen narrower; the mandibles in both species elongate, curved and sickle-shaped.

Worker minor. Length 4–4½ lines.—Distinguished from the worker of *hamata* by having the scape ferruginous, the mandibles distinctly denticulated on their inner margin; the second node of the petiole more narrow and elongate.

Hab. Brazil (Ega).

The distinction of this species from *hamata* rests entirely on a comparison of specimens. Mr. Bates has furnished the following particulars:—"This Eciton is the common species at Ega, its columns of foragers being seen very often, but not daily, in different parts of the forest; it is very nearly allied to a species ticketed 42 (*hamata*), but it differs in always having the basal joint of the antennæ pale: in 42 it is always concolorous. The large-headed individuals are always extremely similar one to another, none occurring intermediate in size between them and the small ones. I am quite convinced these large-headed ones are a distinct order of individuals in a colony of Ecitons, and fulfil some distinct, peculiar functions; what those functions are I cannot decide at present; I once saw something of their relations to the rest of the colony in a very large and extraordinary procession. On a clayey piece of ground near the beach, just outside the margins of the forest where the place formed a snug little haven surrounded by high rocks and shrubbery, a dense column of Ecitons descended from amongst the rocks on one side of the harbour, traversing the beach and climbing again the opposite side; the length of the column visible was from 60 to 70 yards, and yet there was no appearance of either the van or the rear of the army; they were all moving in the same direction except a few indivi-

duals outside the column, these occasionally ran rearward a short distance, and then again advanced in the direction of the main body: these means were apparently for the purpose of keeping up a current of intelligence along the line. In fact when I disturbed the column, or abstracted an individual, intelligence of the disturbance was very rapidly communicated several yards backwards, and the column at that point commenced retreating. The procession was not a predatory affair, because all the small-headed individuals conveyed in their mandibles a little cluster of white maggots, probably larvæ of their own species. I have no doubt of its being a migration, as at the time of observation a change of season was taking place, the river retreating from the beach, and the open places above, about to be burnt up by the hot sun of the dry season.

"The large-headed individuals were in proportion of perhaps about five in one hundred to the small individuals, but not one of them carried anything in its mandibles; they were all trotting along outside the column, and distributed in regular proportion throughout the whole line of army, their globular white heads rendering them very conspicuous among the rest, bobbing up and down as they traversed the inequalities of the road.

"The progress of these ants is not in one simple line when on a foraging expedition, but a line with many branches; a column is occasionally pushed out in the direction of some promising locality. I once observed one of these terminating at a decayed fallen tree; the ants were busy about it, a few having seized some large *Formicidæ*, and also some soft-bodied wasps, these they tore in pieces, and divided the load; the whole column then retired, and re-entered the main line. A branch column is not a party separated from the rest—there is no break in the lines of these ants—but there is always a number passing and repassing, keeping up the line of communication.

"I lately discovered what I imagined was a formicarium of an Eciton: I traced a procession in which many were carrying ova, larvæ, and pupæ; at a short distance I found the column terminating abruptly, not as I expected at a vast earthy dome, but at a heap of dead leaves in a hard trodden pathway; on the leaves were mustered an unusual number of the large-headed individuals, who resisted my disturbing the leaves with great ferocity. I found under the leaves a large collection of ova, pupæ, and larvæ, all apparently of one species, certainly a Myrmicide, as the pupæ were not enclosed in cocoons; the small-headed workers rapidly gathered up the whole, and a great number of others soon came up, including many of the large-headed fellows, and attacked me most furiously; it was no doubt a temporary store made during a predatory expedition."

3. ECITON VAGANS. B.M.

Formica vagans, *Oliv. Encycl. Méth.* vi. 501.
Eciton vagans, *Smith, Trans. Ent. Soc. Lond.* iii. new ser. (worker major).
Eciton simillina, *Smith, Trans. Ent. Soc. Lond.* iii. new ser. (worker minor).

Hab. Brazil; Mexico.

The *E. vagans* and *E. crassicornis* have been received from the same locality, and both are entirely of a reddish-brown colour, including the mandibles and legs; there can be little doubt of their belonging to the same species; in general form they resemble *E. hamata*, the large worker having similar elongated curved mandibles.

4. ECITON RAPAX. Pl. VI. figs. 6, 7. B.M.

Eciton rapax, *Smith, Trans. Ent. Soc. Lond.* iii. new ser.
Atta quadriglumis, *Halid. Trans. Linn. Soc.* xiv. 328.

Hab. Brazil (Para; Santarem; Ega).

This species is readily distinguished by its having the head, thorax, legs and nodes of the abdomen opake black, and the abdomen pale reddish yellow. Mr. Bates says, "This is the largest species of the genus that I have seen; its columns are narrower than those of the other species, in fact they generally run along in single file, and forage in the same way. I have found them carrying off great numbers of cocoons of a species of *Formica*; I have searched the columns long and repeatedly without finding any individuals with large heads and long mandibles."

5. ECITON CRASSICORNIS. Pl. VI. figs. 1, 2, 3, 4. B.M.

Eciton crassicornis, *Smith, Trans. Ent. Soc. Lond.* iii. new ser.

Hab. Brazil (Villa Nova).

This is a species very easily recognized by its short thick antennæ; the large workers are not furnished with elongated mandibles.

6. ECITON LEGIONIS. B.M.

Eciton legionis, *Smith, Trans. Ent. Soc. Lond.* iii. new ser.

Hab. Brazil (Santarem).

7. ECITON PILOSA. B.M.

Worker. Length 2¾ lines.—Brown-black, smooth and shining:

the antennæ, mandibles, face anteriorly, and the legs, rufo-testaceous; the insect thinly covered with long griseous pubescence. Head ovate; the eyes very minute, and glassy bright. Thorax shining and smooth, anteriorly roughened, and opake behind, deeply strangulated a little behind the middle; the metathorax not grooved above, rounded behind. Abdomen ovate; the first node of the peduncle elongate-ovate, the second globose.

Worker minor. Length 1½ line.—There is no difference between this and the large worker, except in its being smaller.

Hab. Brazil (Villa Nova).

8. ECITON PRÆDATOR. B.M.

Worker. Length 3½ lines.—Ferruginous: the head and thorax very finely, closely and delicately punctured; head very large, as in *E. hamata*; mandibles very stout, widened at their apex, their inner margin smooth, blunt at the tip, produced within into a blunt tooth, finely striated longitudinally. Thorax narrowed behind; the metathorax not spined or grooved above. Abdomen small and ovate; the first node of the peduncle longer than the second, which is nearly globose.

Worker minor. Length 2 lines.—This differs from the large worker in the form of its mandibles, they are of a more triangular form, their apex acute, and curved downwards, their inner margin finely denticulated; the antennæ are longer, and, as well as the legs, much paler; in other respects they agree.

Hab. Brazil (Ega).

Of the habits of this species Mr. Bates furnishes the following account: "This species of *Eciton* differs from all the others in its habits; instead of foraging in narrow columns, it hunts in dense masses of myriads of individuals. Nothing in Entomology is more curious than to watch the vast compact body moving rapidly along; where they pass, all the rest of the insect world is in commotion and alarm. They stream along the ground, and climb to the summit of all the lower trees, searching every leaf to its apex; when they come to a mass of decaying vegetable matter, they cover it with a living crowd, penetrate every chink and cranny, then leave it, and rapidly move on. All apterous insects, especially fat spiders and larvæ of *Blattæ*, which latter are excessively numerous about the fallen foliage, scamper off before the rapidly moving mass, in quite a ludicrous manner. The smaller larvæ of Lepidoptera and Diptera fall an easy prey to them, as well as some of the large obese species of the genus *Formica*. The phalanx altogether, when passing over a tract of open ground, occupies a space of from six to ten square yards; on examining them closely, they are seen to move not

altogether in one uniform direction, but in variously spreading dense columns, now separating a little from the general mass, now reuniting with it. The margins of the phalanx spread out at times like a cloud of skirmishers from the vast army. I have not been able to find their formicarium, and have not the least idea how or where to find it."

9. ECITON PACHYCERUS. B.M.

Worker. Length 2 lines.—Chestnut-red: smooth and shining. Antennæ short and very stout, shorter than the thorax. Thorax anteriorly shining, the metathorax opake; the nodes of the peduncle incrassate, subglobose; the femora very slender at the base, and incrassate towards their apex; entirely destitute of pubescence.

Hab. South America? (Coll. Gen. Hardwick.)

This species is the only one of the genus which is apparently quite destitute of eyes; in *E. legionis* and *E. pilosa* they are extremely minute, but we have failed, even with the aid of a powerful microscope, in our endeavours to discover them in this species.

Genus 9. PSEUDOMYRMA.

Pseudomyrma, *Guér. Icon. Règ. Anim.* 427 (1835–8).
Myrmex, *Guér. Icon. Règ. Anim.* 427 (1835–8).
Leptalea, *Spin. Mem. Accad. Torino*, xiii. 68. 30.
Tetraponera, *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. ix. 44 (1842).

Antennæ subclavate, 13-jointed in the females, 12-jointed in the workers, not quite so long as the head and thorax, inserted anteriorly on the face, approximating at their base; mandibles triangular, toothed on their inner margin; eyes largely developed, elongate-ovate, occupying a large portion of the head; ocelli present in all the sexes. Thorax elongate; anterior wings with one marginal and three complete submarginal cells; the second large, and extending to the apex of the wing. Abdomen ovate, pedunculate, the peduncle with two nodes, the first smaller than the second and pedunculate, the second node globose.

Having obtained females of *Pseudomyrma*, and finding this sex in every particular agreeing with the generic characters laid down by Guérin, we have no hesitation in coming to the conclusion that the *Pseudomyrmex* is the female of *Pseudomyrma*.

1. PSEUDOMYRMA BICOLOR.

Pseudomyrma bicolor, *Guér. Icon. Règ. Anim.* 427 ☿.
Smith, Trans. Ent. Soc. new ser. iii. 157. 1 ☿.

Hab. Columbia.

This species is 5 lines in length, black, shining, and covered with silky pile; the mouth, anterior margin of the face, the flagellum beneath, the articulations of the legs, the anterior tibiæ, and the tarsi, rufo-testaceous; the first node of the peduncle ferruginous.

2. PSEUDOMYRMA UNICOLOR.

Pseudomyrma unicolor, *Smith, Trans. Ent. Soc.* new ser. iii. 158. 2 ☿.

Hab. Brazil.

This insect is black, smooth and shining, covered with pale glittering pile and scattered erect hairs; the thorax flattened above; the mandibles and claws of the tarsi rufo-testaceous.

3. PSEUDOMYRMA TERMITARIA. B.M.

Pseudomyrma termitaria, *Smith, Trans. Ent. Soc.* new ser. iii. 158. 3 ♀ ☿.

Hab. Brazil.

Mr. Bates informs us that this species forms its elliptical chamber or dwelling in the walls of the tumuli of a species of white ant; it is of a ferruginous colour, with the head and apical segments of the abdomen black; the margins of the segments of the latter rufo-piceous; the mandibles and antennæ ferruginous, the latter more or less fuscous above; it is $3\frac{1}{2}$ lines in length.

4. PSEUDOMYRMA MACULATA.

Pseudomyrma maculata, *Smith, Trans. Ent. Soc.* new ser. iii. 158. 4 ☿.

Hab. Brazil.

This species is 3 lines long, of a ferruginous colour, with the abdomen and second node of the petiole fuscous; there is also a fuscous spot on the vertex enclosing the ocelli, and a fuscous longitudinal stripe on the metathorax; the eyes large and black, the mandibles pale testaceous.

5. PSEUDOMYRMA SERICATA.

Pseudomyrma sericata, *Smith, Trans. Ent. Soc.* new ser. iii. 159. 5 ☿.

Hab. Brazil.

This species is readily distinguished, being black, and covered with a glittering silvery pile; the legs are dark rufo-testaceous, with the anterior tibiæ, knees and tarsi pale testaceous; the tips of the antennæ, the anterior margin of the face, and the mandibles, pale testaceous; its length is $3\frac{1}{2}$ lines.

6. PSEUDOMYRMA ELEGANS.

Pseudomyrma elegans, *Smith, Trans. Ent. Soc.* new ser. iii. 159. ♀☿.

Hab. Brazil (Para).

This species has the head and abdomen black, the thorax, legs and nodes of the petiole, ferruginous; the scape in front, the base of the flagellum, the anterior margin of the face and the mandibles, ferruginous; it is 3 lines long.

7. PSEUDOMYRMA NIGRICEPS. B.M.

Pseudomyrma nigriceps, *Smith, Trans. Ent. Soc.* new ser. iii. 159. 7☿.

Hab. Brazil (Santarem).

This species is 2½ lines long, of a ferruginous colour, with the head black; and the apical segments of the abdomen fuscous; the thorax and first node of the peduncle flattened above, the lateral margins slightly raised, forming sharp carinæ; the mouth and antennæ red, the latter fuscous towards the apex above.

8. PSEUDOMYRMA OCULATA. B.M.

Pseudomyrma oculata, *Smith, Trans. Ent. Soc.* new ser. iii. 159. 8. pl. 13. f. 9 ♀ ☿.

Hab. Brazil.

This curious species is distinguished by the remarkable form of the head, which is two-thirds the length of the thorax; it is elongate with its sides parallel, and wider than the thorax; of a fusco-testaceous colour with hyaline wings.

9. PSEUDOMYRMA CEPHALICA. Pl. X. figs. 25, 26. B.M.

Pseudomyrma cephalica, *Smith, Trans. Ent. Soc.* new ser. iii. 168. 11 ♂ ♀ ☿.

Hab. Brazil (Villa Nova).

All the sexes of this species were found by Mr. H. W. Bates in their formicarium, the chambers of which were excavated in dead twigs. The male is 2½ lines long, and of a fusco-testaceous colour, the face, clypeus, mandibles, antennæ and legs being pale testaceous; the wings are colourless and beautifully iridescent. The female is of a reddish-yellow, with the eyes, the ocelli, the basal margin of the first segment of the abdomen, and the two apical segments, black; the head elongate, with the sides parallel. The worker is of the same colour as the female, but

the metathorax and abdomen are slightly fuscous, the femora are also more or less fuscous; the head is oblong, slightly narrowest behind, the eyes large, ovate and black.

10. PSEUDOMYRMA MANDIBULARIS.

Leptalea mandibularis, *Spin. Mem. Accad. Torino*, xiii. 68. 50.

Hab. Para.

This species is described as being black, with the mandibles white; eyes large, oblong and ovate; antennæ short, thick, and inserted near the mouth; the abdomen with two nodes, both petiolated, the first being much smaller than the second, and having a long petiole; from these characters, it appears to belong to the genus *Pseudomyrma*.

11. PSEUDOMYRMA TESTACEA.

Tetraponera testacea, *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. ix. 45 ♀; *Trans. Ent. Soc.* 2nd ser. iii. 10.

Pseudomyrma testacea, *Smith, Trans. Ent. Soc.* new ser. iii. 168. 10.

Hab. South America (Napo).

Entirely rufo-testaceous, smooth and shining; the head oblong, the sides parallel, emarginate behind; the eyes large and ovate, and, as well as the ocelli, black; an impressed line runs from the anterior ocellus to the insertion of the antennæ. This species is 3½ lines long.

12. PSEUDOMYRMA PERBOSCII.

Myrmex Perboscii, *Guér. Icon. Règ. Anim.* iii. texte 428 ♀.

Hab. Yucatan (Bay of Campeachy).

This species is 4¼ lines long, of a reddish-yellow, with the abdomen black; the head is oblong, with the margins parallel; the thorax elongate, the wings tinted with yellow, the nervures brown; the legs, abdomen and nodes of the peduncle, of the same form as in the rest of the species.

13. PSEUDOMYRMA PHYLLOPHILA.

Worker. Length 2⅔ lines.—Obscure rufo-testaceous: the head and prothorax of the brightest colour; the antennæ, face anteriorly, mandibles, anterior tibiæ, the tarsi and articulations of the legs, pale testaceous; the antennæ dusky towards the apex. Abdomen ovate, pointed at the apex, covered with fine silky pile; the first node of the abdomen clavate, the petiole short

and thick, with a minute acute tooth at the base beneath, the sides of the node flattened; the second node much wider and subglobose.

Hab. Rio (Constantia). (Coll. Rev. Hamlet Clark.)

This species resembles *P. sericata*, but in that species the petiole is longer and very slender, and not toothed beneath.

14. PSEUDOMYRMA EJECTA.

Worker. Length 1½ line.—Rufo-testaceous, smooth and shining: the head, hinder part of the thorax, femora and tibiæ, darker-coloured; abdomen blackish-brown; the thorax strangulated in the middle, the first node of the petiole subelongate, a minute tooth at the base of the petiole beneath, both the nodes rufo-testaceous; the tarsi pale testaceous.

Hab. ——?

The habitat is probably Brazil; it is the smallest species of the genus known.

15. PSEUDOMYRMA FLAVIDULA.

Worker. Length 2¾ lines.—Entirely smooth and shining yellow: the eyes and tips of the mandibles black; the head broader than in *P. pallida*, which it much resembles; a very faintly impressed line runs from the anterior stemma to the clypeus, which has a deeper impressed pit in the middle. Thorax strangulated in the middle. Abdomen covered with a fine silky pile; more or less fuscous at the apex, and with a fuscous spot, more or less distinct, on each side at the base.

Hab. Brazil (Santarem).

16. PSEUDOMYRMA FABER. Pl. XIII. fig. 11.

Worker. Length 3 lines.—The head and thorax dark blackish-brown, the coxæ and femora dark rufo-piceous, the antennæ, tibiæ and tarsi rufo-testaceous; the mandibles, anterior margin of the face and the abdomen, pale testaceous, entirely smooth and shining; the first node of the petiole slender and clavate, the second subclavate and more ovate.

Hab. Brazil (Ega).

17. PSEUDOMYRMA CLADOICA. Pl. XIII. fig. 12.

Worker. Length 4 lines.—Head black; the thorax, legs and abdomen reddish-yellow; the tarsi, and the intermediate and

posterior tibiæ, the mandibles and base of the scape of the antennæ, dark rufo-piceous. The head densely covered with pale golden pubescence, and very broad, much wider than the thorax; the eyes very large and ovate; the thorax flattened above, the lateral margins acute, the disk longitudinally aciculate; the nodes of the petiole and the abdomen smooth and shining; the entire insect sprinkled with erect black hairs.

Hab. Brazil (Ega).

18. PSEUDOMYRMA VIDUA. Pl. XIII. fig. 13.

Male. Length 3 lines.—Rufo-testaceous: the apex of the abdomen fuscous; the face, antennæ and legs paler than the thorax or abdomen; the eyes and ocelli large and prominent, the former black, the latter of a glassy brightness; wings hyaline and beautifully iridescent, the nervures testaceous.

Hab. Brazil (Ega).

19. PSEUDOMYRMA LIGNISECA.

Female. Length 3 lines.—Reddish-yellow: eyes very large, ovate and black; the teeth of the mandibles blackish; the head anteriorly, the antennæ and legs, pale rufo-testaceous; the prothorax with the lateral margins acute and slightly raised; the first node of the petiole clavate and compressed, with a deep longitudinal groove above, the lateral margins forming elevated carinæ which are prolonged at the apex, forming two blunt teeth; the second node globose; the first segment of the abdomen with a slight stain on each side at the base, and the two following segments also slightly stained, their apical margins pale.

Hab. Brazil (Ega).

20. PSEUDOMYRMA VENUSTA.

Female. Length 5½ lines.—The head, thorax and legs black, the abdomen ferruginous; the scape in front, the apex of the antennæ, the anterior margin of the face, the mandibles, the anterior tibiæ and tarsi, the intermediate tibiæ in front, as well as the apex of the femora in front, rufo-testaceous; the articulations of the legs pale; the head and thorax covered with a fine silky pile; the first node of the petiole subglobose, the second node rounded and narrowed to its base; the abdomen covered with a pale golden pile, bright and glittering in certain lights.

Hab. Brazil (Ega).

21. PSEUDOMYRMA PALLIDA. B.M.

Pseudomyrma pallida, *Smith, Trans. Ent. Soc.* new ser. iii. 9 ☿.

Hab. East Florida.

This species is honey-yellow, the eyes being large and black; it is entirely smooth and shining, and 2 lines long.

22. PSEUDOMYRMA MINUTA.

Eciton minutum, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 112 ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 53.

Hab. India (The Carnatic and Malabar).

23. PSEUDOMYRMA RUFIPES.

Eciton rufipes, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 112 ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 53.

Hab. India (Salem district).

Mr. T. C. Jerdon describes four species which appear to belong to this genus; that they do not belong to *Eciton* is readily ascertained from the fact of their having very large eyes, which is the character of the present genus, the genus *Eciton* being remarkable for possessing the smallest eyes in the whole family of the *Formicidæ*.

24. PSEUDOMYRMA RUFO-NIGRA.

Eciton rufo-nigrum, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) iii. ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 53.

Hab. India (The Carnatic and Malabar).

25. PSEUDOMYRMA NIGRA.

Eciton nigrum, *Jerdon, Madr. Journ. Lit. & Sc.* (1851) 112 ☿; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 53.

Hab. India (The Carnatic and Malabar).

26. PSEUDOMYRMA ATRATA.

Tetraponera atrata, *Smith, Ann. & Mag. Nat. Hist.* 2nd ser. ix. 44.
Pseudomyrma atrata, *Smith, Trans. Ent. Soc. Lond.* 2nd ser. iii.

Hab. Bombay; Borneo (Sarawak).

This species is entirely of a jet-black colour, smooth and shining: the extreme apex of the scape and the basal joint of the flagellum pale rufo-testaceous; the head elongate, with the sides parallel.

27. PSEUDOMYRMA PILOSA.

Worker. Length 2½ lines.—Black; the mandibles, clypeus, carinæ at the base of the antennæ, the antennæ, tibiæ, tarsi and tips of the femora, pale rufo-testaceous; the entire insect covered with fine short silky pubescence; the head prominent before the eyes; the thorax flattened above, the lateral margins with a sharp edge; the divisions between the parts of the thorax strongly marked. Abdomen: the first node with a thick petiole, the second somewhat oblong-ovate, narrowest at the base; the abmen elongate-ovate, pointed at the apex.

Hab. Borneo.

28. PSEUDOMYRMA CAPENSIS.

Worker. Length 3 lines.—Reddish-yellow, smooth and shining. Head oblong-quadrate, emarginate behind; eyes large, black and ovate; only two distinct ocelli. Thorax oblong, widest in front, flattened above or very slightly convex, the lateral edges acute; the prothorax narrowed to the mesothorax, the latter and the metathorax forming an elongated oval above. Abdomen: the first node of the peduncle of a clavate form, the second semiglobular, the abdomen acute at the apex.

Hab. Cape of Good Hope.

29. PSEUDOMYRMA NATALENSIS.

Female. Length 3¾ lines.—Reddish-yellow: the tips of the mandibles and the apex of the abdomen blackish. Head oblong-quadrate, the posterior angles rounded; eyes large and ovate, placed on each side of the head, a little behind the middle, of a pale ashy-grey. Thorax oblong; the anterior margin transverse or very slightly arched; the sides of the thorax nearly parallel; the metathorax convex and rounded behind. Abdomen: the first node petiolated, the petiole short, with a compressed tooth at the extreme base beneath, somewhat pear-shaped and flattened above; the second node subglobose.

Hab. Port Natal.

Genus 10. DACETON.

Formica, pt., *Latr. Hist. Nat. Fourm.* 244 (1802).
Atta, pt., *Guér. Icon. Règ. Anim.* 421 (1835–8).

1. DACETON ARMIGERUM.

Formica armigera, *Latr. Hist. Nat. Fourm.* 244. 9. f. 58 ☿.

Atta armigera, *Guér. Icon. Règ. Anim.* 421. pl. 69. f. 2 ☿.
Daceton armigerum, *Perty, Del. An. Art.* 136. t. 27. f. 5.
Smith, Trans. Ent. Soc. new ser. ii. 217 ♂ ♀ ☿, pl. 21. f. 7 ♂, 8 ♀.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

Genus 11. ORECTOGNATHUS.

Orectognathus, *Smith, Trans. Ent. Soc.* new ser. ii. 227 (1852-53).

1. ORECTOGNATHUS ANTENNATUS.

Orectognathus antennatus, *Smith, Trans. Ent. Soc.* new ser. ii. 228. pl. 21. f. 9.

Hab. New Zealand.

Subfam. 3. ATTIDÆ.

The number of joints in the maxillary palpi varying from 4 to 2, those of the labial palpi from 3 to 2; the ocelli usually obsolete in the workers, some species of the large workers furnished with a single ocellus; the petiole of the abdomen formed of two nodes, females and workers having a sting. The colonies of the different genera and species consisting of males, females, large and small workers; the large workers with enormously enlarged heads, those of the small workers of the ordinary size.

Genus 1. ATTA.

Formica, pt., *Linn. Syst. Nat.* i. 962 (1766).
Atta, *St. Farg. Hym.* i. 173 (nec *Fabr.*) (1836).
Myrmica, pt., *Nyl. Form. Fr. et d'Algér.* 83 (1856).
Aphenogaster, *Mayr. Form. Austr.* 194 (1855).

Maxillary palpi 4-jointed, labial palpi 3-jointed; antennæ 12-jointed in the female and worker, 13-jointed in the male. Wings longer than the body, with one marginal and three submarginal cells, the third sometimes incomplete; the second submarginal cell bell-shaped, the nervure at its apex uniting with that at the base of the marginal cell. Abdomen with two nodes in the petiole; the large workers usually with enormously developed heads, the small workers with heads of the ordinary size. Pl. IX. fig. 24.

It is very probable, that were the palpi of all the species included in this catalogue examined, they would not agree in the number of joints given in the generic characters of *Atta*, and at a future time it may be necessary to remove some into the genus *Solenopsis*, or to establish new genera for their reception; it will

be observed that in many instances only one sex has been examined, and frequently only single examples; we have therefore included in the present genus all those forms which appear to have a close relationship to the type, *Formica barbara* of Linnæus.

Species of Europe.—Sp. 1-4.

1. ATTA BARBARA. B.M.

Formica barbara, *Linn. Syst. Nat.* i. 962. 2 ☿ (var.).
Fabr. Syst. Ent. 393. 11; *Ent. Syst.* ii. 356. 26; *Syst. Piez.* 403. 30.
Oliv. Encycl. Méth. vi. 495. 23.
Latr. Hist. Nat. Fourm. 262.
Formica binodis, *Fabr. Syst. Piez.* 405. 39.
Oliv. Encycl. Méth. vi. 496. 27.
Latr. Hist. Nat. Fourm. 285.
Formica juvenilis, *Fabr. Syst. Piez.* 405. 38.
Myrmica capitata, *Losana, Form. Piem.* 325.
Nyl. Form. Fr. et d'Algér. 83. 9.
Formica capitata, *Latr. Hist. Nat. Fourm.* 234. pl. 10. f. 66.
Atta capitata, *St. Farg. Hym.* i. 173. 1.
Lucas, Explo. Sc. de l'Algér. iii. 300. 329.
Mayr. Form. Austr. 190. 2; *Ungar. Ameis.* 21. 1.

Hab. France; Germany; Austria; Hungary; Dalmatia; Italy; Sardinia; Sicily.

2. ATTA STRUCTOR. B.M.

Formica structor, *Latr. Hist. Nat. Fourm.* 236.
Formica lapidum, *Fabr. Syst. Piez.* 407. 49 ☿.
Formica rufitarsis, *Fabr. Syst. Piez.* 406. 45 ♀.
Atta structor, *St. Farg. Hym.* i. 174. 2.
Schenck, Beschr. Nass. Ameis. 113.
Mayr. Form. Austr. 192. 3; *Ungar. Ameis.* 22. 2.
Formica ædificans, *Schill. Bemerk. üb. die in Schles.* 56.
Myrmica mutica, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 39. 6; *Form. Fr. et d'Algér.* 85. 10.

Hab. France; Germany; Austria; Hungary; Dalmatia; Switzerland; Italy.

3. ATTA SUBTERRANEA. B.M.

Formica subterranea, *Latr. Hist. Nat. Fourm.* 219. pl. 10. f. 64. pl. 11. f. 70.
Schill. Bemerk. üb. die in Schles. 55.

Myrmica subterranea, *Schenck, Beschr. Nass. Ameis.* 110. *Nyl. Form. Fr. et d'Algér.* 85.
Atta subterranea, *Mayr. Form. Austr.* 188. 1.

Hab. France; Germany; Switzerland.

4. ATTA PALLIDA. B.M.

Myrmica pallida, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 42. 10; *Form. Fr. et d'Algér.* 86 (note).

Hab. Messina.

Species of Asia.—Sp. 5–14.

5. ATTA MINUTA.

Atta minuta, *Jerdon, Madr. Journ. Lit. & Sc.* 105; *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 47. 1 (1854).

Hab. India (Carnatic).

6. ATTA DESTRUCTA.

Atta destructa, *Jerdon, Madr. Journ. Lit. & Sc.* 105 (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 47. 2 (1854).

Hab. India.

7. ATTA DOMICOLA.

Atta domicola, *Jerdon, Madr. Journ. Lit. & Sc.* 106 (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 47. 3 (1854).

Hab. India (Nellore).

8. ATTA RUFA.

Atta rufa, *Jerdon, Madr. Journ. Lit. & Sc.* 106 (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 48. 4 (1854).

Hab. India.

9. ATTA FLORICOLA.

Atta floricola, *Jerdon, Madr. Journ. Lit. & Sc.* 107 (1851); *Ann. & Mag. Nat. Hist.* 2nd ser. xiii. 49. 6 (1854).

Hab. India (Tellicherry).

10. ATTA INSTABILIS. B.M.

Worker. Length 3–3½ lines.—Head ferruginous, thorax and legs more or less obscurely so; abdomen black and shining.

Head large, wider than the thorax or abdomen, finely longitudinally strigose; the mandibles striated, their teeth and margins black; the eyes and antennæ black, the latter sometimes fusco-ferruginous, the tip of the scape ferruginous. Thorax striated, obliquely so at the sides, and transversely so above; the metathorax with a broad deep longitudinal channel, which is transversely striated, not spined. Abdomen ovate, the nodes of the petiole rugose; the entire insect thinly sprinkled with pale pubescence.

Male. Length 3½–4 lines.—Black and shining, pubescent: the tips of the antennæ and the apical joints of the tarsi pale rufo-testaceous. Head small, much narrower than the thorax, eyes prominent; the wings colourless and iridescent, with the nervures rufo-testaceous, the stigma darkest. Abdomen very black and shining.

Hab. Northern India.

11. ATTA BELLICOSA. B.M.

Worker. Length 3 lines.—Ferruginous and shining: head very large, deeply emarginate behind, and with a central longitudinal channel; the clypeus smooth and shining; the face longitudinally striated anteriorly, the head behind transversely so; the mandibles very stout, their inner margins smooth and black, with a single notch at their apex, striated at their base and apex, and punctured in the midddle. Thorax, legs and base of the abdomen rather paler than the head; the former rounded in front, narrowed behind, and deeply strangulated between the meso- and metathorax, the latter armed with two acute spines.

Worker minor.—Only differs in being smaller, in having the mandibles toothed on their inner edge, in the head being smooth behind, and in being altogether of a paler colour.

Hab. Birmah.

12. ATTA PENETRANS. B.M.

Female. Length 4 lines.—Head and thorax black and shining, abdomen dark rufo-piceous. Head longitudinally striated; the mouth, clypeus and antennæ ferruginous. Thorax elongate-ovate; the prothorax in front and the legs ferruginous, the striæ on the disk intermixed with oblong punctures, a smooth impunctate line in the middle of the thorax in front; the metathorax truncate, the truncation smooth and shining; the wings subhyaline, with a fuscous line along the costal nervure, the apical margins of the wings with a fringe of fine white hairs. Abdomen:

the apical margins of the segments rufo-piceous, the nodes of the peduncle globose and punctured.

Hab. Borneo (Sarawak). (Coll. A. R. Wallace.)

13. ATTA CINGULATA.

Worker major. Length 1¾ line.—Ferruginous. Head very large, thrice the width of the thorax; the antennæ pale ferruginous; eyes very small, placed a little before the middle, at the sides of the head. Thorax much swollen in front, much narrowed behind, with two short acute spines on the metathorax; legs pale rufo-testaceous. Abdomen ovate, the base truncated; a fuscous ring round the middle; the nodes of the peduncle globose.

Hab. Borneo (Sarawak). (Coll. A. R. Wallace.)

14. ATTA NODIFER. B.M.

Worker minor. Length 1¼ line.—Rufo-testaceous, and entirely smooth and shining: the mandibles, antennæ, articulations of the legs and the tarsi, pale testaceous; the thorax, nodes and base of the abdomen rather paler than the head; the thorax narrowed behind, and deeply strangulated between the meso- and metathorax, the latter having two minute acute spines; the antennæ and legs pubescent, and a few longer hairs thinly scattered over the head, thorax and abdomen; the first node of the petiole small and subconical, the second as wide as the metathorax, and globose.

Hab. North China.

Species of Africa, Australia, and New Zealand.—Sp. 15-21.

15. ATTA TESTACEO-PILOSA. Pl. IX. figs. 25, 26.

Myrmica testaceo-pilosa, *Lucas, Explo. Sc. de l'Algér.* iii. 300.
Nyl. Form. Fr. et d'Alger. 86. 12.
Aphenogaster similis, *Mayr. Form. Austr.* 194. 1.

Hab. Algeria; Sicily; Austria; Dalmatia; Sardinia.

16. ATTA SCALPTURATA.

Myrmica scalpturata, *Nyl. Form. Fr. et d'Algér.* 83. 8.

Hab. Algeria. (Coll. Dr. Sichel.)

17. ATTA HOSTILIS. B.M.

Worker. Length 1½ line.—Ferruginous, with the abdomen fuscous, or sometimes black; the thorax, legs and antennæ paler

than the head, slightly pubescent. Head enormously large, shining, deeply emarginate behind, with a central longitudinal channel, the face striated anteriorly; the mandibles very stout, their inner margin not toothed. Thorax rounded in front, narrowed behind, and deeply strangulated between the meso- and metathorax, the latter with two minute acute spines. Abdomen ovate.

Female. Length 3¼ lines.—Fusco-ferruginous and shining: the head ferruginous and longitudinally striated; the legs and antennæ pale; wings subhyaline, and iridescent, the nervures pale testaceous, the metathorax with two short acute spines.

Hab. Port Natal.

18. ATTA SPINODA. B.M.

Female. Length 4 lines.—Black and shining, with the antennæ, mandibles, legs, head and thorax beneath, ferruginous; the vertex and the nodes of the peduncle obscure ferruginous; the head longitudinally striated. Thorax impunctate; the metathorax transversely striated, and armed with two short stout acute spines. Abdomen elongate, with the apical margins of the segments more or less rufo-piceous; the second node of the peduncle produced on each side into a short acute spine.

Hab. Australia (Adelaide).

19. ATTA VIGILANS. B.M.

Worker. Length 2 lines.—Ferruginous, with the abdomen fuscous, and its base more or less pale. Head very largely developed, oblong, with a deep emargination behind, and a central longitudinal channel extending to the clypeus; the posterior half of the head, the clypeus and mandibles, smooth and shining, the latter with a few scattered punctures; the anterior margin of the face and the inner margin of the mandibles blackish; the anterior half of the face striated. Thorax smooth and shining; a deep strangulation between the meso- and metathorax, the latter with two short acute spines. Abdomen ovate and slightly pubescent.

Hab. Australia (Melbourne).

20. ATTA ANTIPODUM. B.M.

Female. Length 6 lines.—Black and shining: head small, much narrower than the thorax, roughly punctured, running into striæ on the anterior portion of the face; the mandibles stout and strongly punctured; the flagellum and legs ferrugi-

nous. Thorax ovate, finely and sparingly punctured; the first node emarginate above, the second transverse; wings ample, subhyaline, yellowish at their base, the nervures pale rufo-testaceous, the stigma fuscous. Abdomen oblong, with the margins of the segments slightly depressed, and thinly sprinkled, as well as the head, thorax and legs, with short pale glittering hairs.

Hab. Australia (Swan River).

21. ATTA ANTARCTICA. B.M.

Formica antarctica, *White, Zool. Erebus & Terror*, pt. 2.

Female. Length 3½ lines.—Ferruginous: head narrower than the thorax; the antennæ dark fusco-ferruginous, with the basal joints of the flagellum and the apex of the scape ferruginous. Thorax: a black stripe on each side of the disk of the mesothorax, and an abbreviated central one in front; the sutures of the scutellum, post-scutellum, and a patch on each side of the pectus, black; the legs more or less nigro-piceous, with the articulations and the tarsi pale. The abdomen with a black fascia on the apical margins of all the segments.

Hab. New Zealand.

Species of South America.—Sp. 22–29.

22. ATTA FABRICATOR.

Worker major. Length 1¾ line.—Head and thorax ferruginous; the abdomen, nodes of the petiole, the femora and tibiæ, nearly black, the tarsi pale rufo-testaceous. The head very large, emarginate behind, with the anterior portion finely striated, the vertex being smooth and shining. Thorax narrowed behind, and armed on the metathorax with two minute upright spines.

Worker minor.—Rather smaller than the large worker, of a more slender form; the head of an ordinary size, and entirely pale rufo-testaceous, and very smooth and shining; the abdomen rather darker than the head and thorax.

Female. Length 3½ lines.—The head, thorax and legs pale rufo-testaceous; the disk of the thorax with three longitudinal fuscous stripes; the margins of the scutellum and the base of the metathorax fuscous; the femora and tibiæ fuscous, with their base and apex pale; the abdomen and nodes of the petiole nearly black, the former at its extreme base, and the latter beneath, pale.

Male.—Nearly as large as the female, jet-black, smooth and

shining; the antennæ, articulations of the legs, and the tarsi, pale; wings hyaline and iridescent, with the nervures pale testaceous.

Hab. Brazil (Rio). (Coll. Rev. Hamlet Clark.)

23. ATTA RUBRA. B.M.

Female. Length 4 lines.—Deep reddish-brown: the legs paler than the body, with the femora blackish in the middle. The head longitudinally striated, the mandibles smooth and shining. Thorax: the disk very finely and regularly striated, the scutellum shining, the metathorax armed with two short acute spines. Abdomen elongate-ovate; the basal segment opake, the following smooth and shining, with their apical margins rufo-testaceous.

Hab. Brazil (Petropolis). (Coll. Rev. Hamlet Clark.)

24. ATTA TESTACEA. B.M.

Worker major. Length 2 lines.—Rufo-testaceous: the head very large, the sides rounded, deeply emarginate behind, with a central, deep, longitudinal channel extending to the clypeus; the face anteriorly coarsely and irregularly striated; the antennæ and legs paler than the head. The thorax deeply strangulated between the meso- and metathorax, the latter having two minute upright acute spines. The abdomen ovate, with the base truncate.

Worker minor.—Length, a little over a line, of a slender form, the head of the ordinary size, the antennæ longer than in the large worker; entirely smooth and shining, with the abdomen dusky.

Hab. Brazil (Rio). (Coll. Rev. Hamlet Clark.)

25. ATTA DILIGENS. B.M.

Worker major. Length 1½ line.—Pale reddish-yellow, with the abdomen slightly fuscous, the head and thorax opake, the abdomen shining. The head very large, the sides rounded, deeply emarginate behind, with a central longitudinal channel extending to the clypeus; the latter, as well as the mandibles, smooth and shining; the inner margin of the mandibles black. The divisions between the pro-, meso- and metathorax strongly marked, the latter with two short acute spines.

Worker minor.—About a line in length, slender, and having the head of ordinary size; the head and abdomen more or less fuscous.

Hab. Brazil (Villa Nova).

26. ATTA NIGRIVENTRIS. B.M.

Worker minor. Length 1 line.—The head and thorax ferruginous; the abdomen and legs black, entirely smooth and shining; the antennæ fuscous; the articulations of the legs and the tarsi pale ferruginous. The thorax with a deep strangulation between the meso- and metathorax, the latter with two minute upright spines.

Hab. Brazil (Rio).

27. ATTA PILIVENTRIS.

Female. Length 2½ lines.—Black: the face anteriorly and the mandibles ferruginous; the apex of the flagellum and the tarsi pale testaceous. Head the same width as the thorax, slightly emarginate behind, and irregularly longitudinally striated. Thorax: the disk very closely and finely striated; the scutellum smooth and shining; the metathorax finely rugose. Abdomen ovate, and covered with fine pale silky pubescence; the head and thorax slightly pubescent.

Hab. Brazil (Tejuca). (Coll. Rev. Hamlet Clark.)

28. ATTA FUMIPENNIS. B.M.

Female. Length 3½ lines.—Pale ferruginous and opake, with the scape, basal joints of the flagellum, and the legs pale; the apical joints of the antennæ and the margins of the mandibles dusky. The head and thorax very evenly and delicately striated; the wings smoky, palest at their base, with the nervures fuscous; the second and following segments of the abdomen shining.

Worker. Length 1¼ line.—Pale rufo-testaceous, not shining: head oblong-ovate, with the mandibles bent, and very acute at their apex, their inner margin furnished with acute teeth; the thorax narrowed, and nearly parallel behind the prothorax; the metathorax armed with two upright acute spines. Abdomen ovate, truncate at the base, and more or less fuscous at the apex.

Hab. Rio. (Coll. Rev. Hamlet Clark.)

29. ATTA BISPINOSA.

Atta bispinosa, *Spin. Faun. Chili*, vi. 244 ☿.

Hab. Chili.

Species of Mexico and Georgia.—Sp. 30, 31.

30. ATTA CLYPEATA. B.M.

Female. Length 3 lines.—Rufo-ferruginous, shining, and

pubescent. Head subquadrate, emarginate behind, and having a deep central longitudinal channel; the ocelli large and prominent; the clypeus concave, its anterior angles produced, forming two acute points; the mandibles dark ferruginous, coarsely striated, and armed with three acute teeth at their apex. Thorax ovate, very smooth and shining on the disk. Abdomen ovate, truncate at the base; the nodes of the petiole transverse, the first produced into a point in the middle of its upper margin.

The male is about the same size as the female, the thorax rufo-testaceous, the legs and antennæ pale testaceous, the head and abdomen dark fuscous, the mandibles and palpi pale testaceous. The clypeus prominent, the ocelli very large; wings hyaline, with the nervures pale testaceous; the nodes of the peduncle compressed and transverse; the upper margin of the first node emarginate.

Hab. Mexico.

Of three examples received, not two agree in colouring: the specimen described I take to be the usual appearance of the insect; the second has the head anteriorly, the tibiæ and tarsi ferruginous, the rest of the body black; the third variety is black, with only a faint tinge of red on the face and mandibles.

31. ATTA CRUDELIS. B.M.

Female. Length 6 lines.—Ferruginous, with the apex of the abdomen more or less fuscous. Head very large, much wider than the thorax, longitudinally striated, the striæ diverging laterally on the vertex; mandibles very stout, strongly striated, and armed with a number of stout acute teeth; the anterior margin of the face, the mandibles beneath, and the cheeks, fringed with long pale yellow hairs. Thorax subglobose; the disk and the scutellum longitudinally striated, the metathorax transversely so; the wings subhyaline, the nervures testaceous, the stigma fuscous, the legs with glittering pale pubescence. The first node of the peduncle oblong and transversely striated, the second subglobose, and also striated transversely; the apical margins of the segments of the abdomen fringed with long glittering white hairs.

Worker major.—Rather smaller than the female, the head larger, and the thorax elongate, slightly narrowed behind, but the head, thorax, and nodes of the peduncle similarly striated; the mandibles shorter, stouter, black, and without teeth; the cheeks have similar fringes of long hair, and the insect is sprinkled over with short glittering pale hairs, like the female.

Hab. Georgia.

Genus 2. PHYSATTA.

Head small; eyes of moderate size, placed a little above the middle of the head; ocelli in a triangle on the vertex; mandibles stout, and denticulate at the apex; antennæ short, not so long as the head and thorax; the scape nearly as long as the flagellum, slightly thickened at the apex; flagellum subclavate, 6-jointed, the first joint shorter than the second, the third, fourth and fifth about the same length as the first, the apical joint the length of the two basal ones. Maxillary palpi 3-jointed, the basal and apical joints of about equal length, the intermediate joint twice the length of the apical one, the latter obliquely truncate at the apex. Labial palpi 3-jointed, the two basal joints clavate, the apical one fusiform. Thorax subglobose; anterior wings with one marginal and two submarginal cells, the first submarginal cell about the length of the stigma, the second extending to the apex of the wing, with one subtriangular discoidal cell; the tibiæ armed with a single spur at their apex. Abdomen globose, pedunculated, the peduncle with two nodes.

This genus in one of its most prominent characteristics agrees with the genus *Heptacondylus*, both having seven-jointed antennæ; the wings, however, have a totally different neuration, and this character is perhaps of paramount importance in constructing generic divisions for the Formicidæ.

1. PHYSATTA DROMEDARIUS. Pl. X. figs. 9–11. B.M.

Female. Length 6½ lines.—The head, thorax, legs, and petiole of the abdomen, ferruginous; the mandibles with four or five black teeth; the head and thorax longitudinally striated, and clothed, as well as the legs, with a thin erect fulvous pubescence; wings dark fuscous; the metathorax with a stout tooth on each side; the truncation transversely striated. Abdomen black; the nodes subglobose, the first attached to the thorax by a short stout petiole, and covered with erect fuscous pubescence.

Hab. Borneo (Sarawak).

2. PHYSATTA CRINITA. B.M.

Female. Length 5 lines.—Ferruginous: the disk of the thorax obscurely so; the abdomen deep fusco-ferruginous; the entire insect thinly covered with pale ferruginous pubescence. The head coarsely rugose; the mesothorax smooth in front, but with deep longitudinal striæ towards the scutellum; the scutellum very prominent and roughly sculptured; the metathorax

with two short stout spines; wings wanting. Abdomen subglobose, the base slightly emarginate.

Hab. India (Madras). (Coll. Walter Elliott, Esq.)

3. PHYSATTA GIBBOSA.

Female. Length 4 lines.—Head, thorax, and nodes of the peduncle ferruginous; the abdomen, legs and antennæ black; the legs with a very obscure ferruginous tint, the tips of the joints brighter; the tips of the joints of the antennæ rufopiceous; the head and thorax longitudinally rugulose; the head, thorax, legs and antennæ thinly clothed with black pubescence; the thorax subglobose, very convex above; the scutellum prominent; the metathorax terminating in two stout spines; the wings dark fuscous. Abdomen globose and shining, thinly sprinkled with black hairs; the nodes of the peduncle subglobose, the first scarcely larger than the second.

Hab. Java. (Coll. East India House.)

4. PHYSATTA NATALENSIS. B.M.

Female. Length 5 lines.—Head, thorax, and nodes of the abdomen bright ferruginous; the antennæ, legs and abdomen very dark fusco-ferruginous; the mesothorax with three fuscous stripes, the central one abbreviated. The head coarsely rugose; the prothorax transversely striated, the striæ delicate and irregular; the mesothorax and scutellum longitudinally striated, the latter very convex and prominent; the metathorax with two stout spines; the wings fuscous; the nodes of the peduncle globose, and of equal size; the entire insect thinly sprinkled with short pale hairs.

Hab. Port Natal.

Genus 3. PHEIDOLE.

Pheidole, *Westw. Ann. & Mag. Nat. Hist.* vi. 87 (1841).
Œcophthora, *Heer, Ueber die Hausameise Madeir.* (1852).

Head large in the worker major, of moderate size in the other sexes. Mandibles very strong, the inner edge oblique, without teeth in the large worker, toothed in the small worker. Maxillary palpi 2-jointed; labial palpi 2-jointed. Antennæ 12-jointed in the females, large and small workers. Thorax narrower than the head, much more so in the large workers. Wings with two complete submarginal cells, and one complete discoidal cell; the metathorax usually with two short spines. The anterior tibiæ

in the females, large and small workers, with a pectinate spine at their apex.

We have compared numerous examples of *Œcophthora* with specimens of *Pheidole providens*, and cannot find the differences mentioned by Professor Heer; there is no difference in the relative length of the first joint of the tarsus; the mandibles are equally acute at their apex; in all generic characters they precisely correspond. We have not seen the males of either of the types, but as other sexes agree in every particular, we have included in one genus all such species as possess the characters above given.

1. PHEIDOLE PUSILLA. Pl. IX. figs. 18–20. B.M.

Œcophthora pusilla, *Heer, Ueber die Hausameise Madeira's*, 1852; *Ann. & Mag. Nat. Hist.* ser. 2. xvii. 225 (1856).

Hab. Madeira.

2. PHEIDOLE PROVIDENS.

Atta providens, *Sykes, Trans. Ent. Soc. Lond.* i. 103. pl. 13. f. 5, 5 *a–d* ☿.

Pheidole providens, *Westw. Ann. & Mag. Nat. Hist.* vi. 87 (1841).

Œcodoma providens, *Jerdon, Madr. Journ. Lit. & Sc.* 108 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 50. 8 (1854).

Hab. India (Poona).

3. PHEIDOLE PALLIDULA.

Myrmica pallidula, *Nyl. Addit. Alt. Adno. Mon. Form. Bor. Eur.* 42; *Form. Fr. et d'Algér.* p. 97.

Œcophthora subdentata, *Mayr. Einige neue Ameis.* 143.

Œcophthora pallidula, *Mayr. Form. Austr.* 183. 1.

Hab. Europe.

4. PHEIDOLE MALABARICA.

Œcodoma malabarica, *Jerdon, Madr. Journ. Lit. & Sc.* 107 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 49 (1854).

Hab. India.

5. PHEIDOLE DIFFUSA.

Œcodoma diffusa, *Jerdon, Madr. Journ. Lit. & Sc.* 109 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 51. 9 (1854).

Hab. India.

6. PHEIDOLE DIVERSA.

Œcodoma diversa, *Jerdon, Madr. Journ. Lit. & Sc.* 109 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 51. 10 (1854).

Hab India (Wynaad).

7. PHEIDOLE AFFINIS.

Œcodoma affinis, *Jerdon, Madr. Journ. Lit. & Sc.* 110 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 51. 11 (1854).

Hab. India (Malabar).

8. PHEIDOLE MINOR.

Œcodoma minor, *Jerdon, Madr. Journ. Lit. & Sc.* 110 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 51. 12 (1854).

Hab. India (Tellicherry).

9. PHEIDOLE QUADRISPINOSA.

Œcodoma quadrispinosa, *Jerdon, Madr. Journ. Lit. & Sc.* 111 (1851); *Ann. & Mag. Nat. Hist.* ser. 2. xiii. 52 (1854).

Hab. India (Malabar).

10. PHEIDOLE OCELLIFERA. B.M.

Worker. Length 6-6½ lines.—Dark chestnut-brown, shining; in some cases the abdomen is nearly black. Head very large, larger and wider than the abdomen; eyes small and ovate, placed before the middle at the sides; in a line with the eyes, in the middle of the face, is a single ocellus; a deeply impressed line extends from the vertex to the anterior margin of the face; the head longitudinally striated in front, the striation somewhat curved at the sides of the insertion of the antennæ, the striæ extending upwards, as high as the upper margin of the eyes in the middle of the front, and the entire length of the head at the sides and beneath; the vertex transversely striated, the striæ curving at the sides, and uniting with that which runs down the sides of the head, the head deeply emarginate behind; mandibles very stout, their inner edge smooth, not toothed; the pro- and metathorax transversely striated, the mesothorax and scutellum shining, with a few scattered punctures; the metathorax armed with two stout acute spines. Abdomen ovate, smooth and shining; the apical margins of the segments rufo-piceous, the nodes of the petiole incrassate, the first striated and notched above, the second node with the upper margin smooth and shining.

Hab. Birmah; Hong Kong; Philippine Islands.

11. PHEIDOLE JANUS. Pl. IX. figs. 13-17. B.M.

Worker major. Length 2 lines.—Head enormously enlarged, of a shining, obscure reddish-brown, deeply emarginate behind, and with a central deeply impressed line running forwards to the insertion of the antennæ; the anterior portion of the head and the mandibles striated, the latter very stout, their inner edge smooth, and with a single notch at their apex; the antennæ and legs pale rufo-testaceous, the thorax, nodes of the peduncle, and base of the abdomen, rather darker; the club of the antennæ 3-jointed, the thorax narrowed behind and armed with two short acute spines; the abdomen, except the base, fusco-ferruginous.

Worker minor. Length a little over a line.—Rather darker than the large worker, the antennæ longer, the head much smaller in proportion, with the mandibles denticulate on their inner margin; the body entirely smooth and shining.

Hab. Ceylon.

12. PHEIDOLE TAPROBANÆ. B.M.

Female. Length 6½ lines.—Black, with obscure ferruginous tints on the face anteriorly, the sides of the thorax and nodes of the peduncle: the head longitudinally striated before the ocelli, and transversely striated on the vertex behind them; the clypeus smooth and shining, the mandibles shining and slightly punctured; the antennæ pale rufo-testaceous; the ocelli large, and of glassy brightness. Thorax ovate; the disk shining, with a few scattered punctures, obliquely striated at the sides anteriorly, and longitudinally so towards the scutellum, the latter smooth, shining and very convex; the metathorax truncate, the truncation transversely striated, the upper portion rugose and armed on each side with a short stout acute spine; the legs ferruginous. Abdomen ovate, smooth and shining; the first node of the peduncle, viewed sideways, is wedge-shaped, transversely striated and emarginate above, beneath, with a longitudinal central flattened appendage; the second node wider than the first, transverse, and narrowed towards the abdomen, its anterior margin smooth and shining.

Hab. Ceylon.

13. PHEIDOLE RUGOSA. B.M.

Worker. Length 3½ lines.—Ferruginous and very pubescent: the head very large, deeply emarginate behind and with a deeply impressed central channel, extending to the anterior margin of the face; the head and thorax closely and coarsely punctured,

the latter narrowed behind, and deeply strangulated between the meso- and metathorax, the latter armed with two acute spines, and obliquely truncate. Abdomen ovate; the first segment with a number of fine longitudinal carinæ, which intermingle at its base, but run parallel at its apex; the following segments more faintly carinate.

Hab. Ceylon.

14. PHEIDOLE SILENUS. B.M.

Worker. Length 2½–4 lines.—Obscure fusco-ferruginous, with the antennæ, articulations of the legs and the tarsi, pale rufo-testaceous. Head very large, nearly quadrate, with the hinder angles rounded, the posterior margin deeply emarginate, the face longitudinally striated, the hinder portion of the vertex transversely so, with a rugose space between these striations; the head beneath has a much finer longitudinal striation; the clypeus and mandibles shining, the latter punctured, with their base striated. Thorax rugose, with the scutellum elevated, forming an obtuse rounded tubercle; the anterior margin of the prothorax with a short obtuse tooth at its lateral angles, and the metathorax armed with two upright stout acute spines. Abdomen ovate and shining, the base delicately and closely striated, the nodes of the peduncle roughened.

Hab. Singapore.

This is probably one of those species which should fall into the genus *Solenopsis*, which has only two joints in the labial and maxillary palpi, and two joints in the club of the antennæ.

15. PHEIDOLE COMATA. B.M.

Worker. Length 3½ lines.—Fusco-ferruginous: the flagellum and legs pale rufo-testaceous. Head oblong-quadrate, deeply notched at the vertex, with a deep longitudinal channel extending to the base of the clypeus; the head longitudinally reticulate-striate, and enormously enlarged. Thorax narrowed behind, and armed with two short acute spines on the metathorax. Abdomen ovate and very delicately reticulated, with a number of little raised points, on each of which is a long pale hair; the head, thorax and legs thinly covered with long pale hairs.

Hab. Borneo (Sarawak).

16. PHEIDOLE FERVENS. B.M.

Worker. Length 2 lines.—Ferruginous: the flagellum, legs, metathorax, and nodes of the abdomen, pale rufo-testaceous.

Head very largely developed, oblong, narrowest in front, deeply emarginate behind; the lateral angles rounded, and with a central channel extending to the base of the clypeus; the head is covered with fine elevated carinæ, between which are fine transverse reticulations; the carinæ are wide apart on the sides of the face, but much closer in the middle. The thorax finely roughened, with two short, erect, acute spines on the metathorax. Abdomen ovate; the extreme base pale rufo-testaceous.

Hab. Singapore.

This species closely resembles the *Pheidole pusilla*; the small worker is not more than a line in length, very smooth and shining, pale rufo-testaceous, with the abdomen fuscous; the legs and antennæ are more elongate than in the larger form, and the head is of ordinary size.

17. PHEIDOLE CEPHALICA. Pl. IX. figs. 21-23. B.M.

Worker major. Length 3 lines.—Head black; thorax, legs and nodes of the peduncle ferruginous; abdomen fusco-ferruginous. Head enormously developed, deeply emarginate behind, with a central longitudinal channel extending to the base of the clypeus; the face striated and ferruginous anteriorly; the mandibles and antennæ ferruginous. The thorax narrowed behind, and armed with two short acute spines at the lateral angles of the verge of the truncation of the metathorax. Abdomen ovate.

Worker minor. Length 2 lines.—Head of the ordinary size, narrowed behind; the sides slightly fuscous; the insect otherwise is ferruginous; the antennæ and legs more elongate than in the large worker, the thorax is also more elongate; the metathorax with two acute spines; the insect sprinkled over with short, erect, pale hairs.

Hab. Brazil (Tunantins).

Genus 4. SOLENOPSIS.

Solenopsis, *Westw. Ann. & Mag. Nat. Hist.* vi. 86 (1841).

Head very large, subquadrate, emarginate posteriorly, divided above by a longitudinal central impressed line; eyes small, lateral, placed before the middle. Antennæ 10-jointed, short and rather slender, inserted forwards on the head in two deep foveæ; the club consisting of two joints. Mandibles very stout, curved, their apex oblique, not toothed. The labial, and also the maxillary palpi, 2-jointed. Thorax much narrower than the head. Abdomen with two nodes at the base, the first compressed, its

margin rounded and entire; the second node subglobose; the abdomen ovate, with the base truncate.

The male and female not known.

The characters of this genus are nearly those of the genus *Œcophthora* with the exception of the number of joints of the antennæ, which is 10: in *Œcophthora* they are 12; in both genera the mandibles are without teeth in the large-headed individuals (soldiers). The club of the flagellum is only 2-jointed in the present genus: in *Œcophthora* it has 3 joints.

1. SOLENOPSIS MANDIBULARIS. B.M.

Solenopsis mandibularis, *Westw. Ann. & Mag. Nat. Hist.* vi. 87. (1841), pl. 2. f. 5 ☿ *a*–5 *o*.

Hab. South America.

Genus 5. CAREBARA.

Carebara, *Westw. Ann. & Mag. Nat. Hist.* vi. 86 (1841).

Head small, much narrower than the thorax; eyes ovate, placed high on the sides of the head; antennæ short; the flagellum 9-jointed, the basal joint as long as the two following, the joints from the second, gradually increasing in length and thickness, not having a distinct club; mandibles short, stout, widening to their apex, which is oblique and dentate; *maxillary palpi* 3-jointed, *labial palpi* 2-jointed. Thorax ovate, very convex above; wings ample; the anterior pair with one marginal, two submarginal and one discoidal cell; the intermediate and posterior tibiæ destitute of spines at their apex, the anterior tibiæ with a single calcar or spine. Abdomen very large, ovate, much wider than the thorax.

The above characters are those of the female, the workers are not known.

1. CAREBARA LIGNATA. Pl. X. figs. 12–15.

Carebara lignata, *Westw. Ann. & Mag. Nat. Hist.* vi. 86 (1841), pl. 6. f. 6 ♀.

Hab. Java. (Coll. W. W. Saunders, Esq.)

The male of this species is in the collection of the East India House, it closely resembles the female, and is of a reddish-yellow, with the wings dark fuscous; the antennæ yellow, elongate and 13-jointed.

2. CAREBARA CASTANEA. B.M.

Female. Length 8½ lines.—Dark chestnut-brown, smooth,

shining and sparingly and delicately punctured. Head small and more strongly punctured than the thorax; a deeply impressed line in front of the anterior ocellus, extending to the base of the clypeus, which is smooth, shining and convex, with its anterior margin rounded; the mandibles punctate-striate, with four or five black acute teeth; the antennæ and apical joints of the tarsi pale rufo-testaceous; the mesothorax with two central approximating lines anteriorly, which terminate a little before the middle of the disk, also a faintly impressed line opposite each tegula; wings smoky, nervures dark ferruginous. Abdomen large and ovate, the nodes of the petiole transverse, the anterior lateral angles of the second node acute.

Hab. Hong Kong.

This species very closely resembles *C. lignata*, but may be distinguished by its having the second node of the petiole widest anteriorly: the reverse is the characteristic of the typical insect.

3. CAREBARA VIDUA. B.M.

Male. Length 7 lines.—Head, thorax and nodes of the petiole black; the antennæ, mandibles, legs and abdomen ochraceous, covered with a thin, short, pale pubescence, which is most dense on the head and thorax; the mesothorax with a central raised line anteriorly, and very closely punctured; wings brown, with the nervures dark ferruginous, the posterior wings palest. Abdomen oblong-ovate, slightly narrowed posteriorly; the first node of the abdomen, viewed above, rounded, the second transverse.

Hab. Port Natal.

The specimen described has its antennæ broken, but of one, eleven joints remain: I have little doubt of two being broken off.

4. CAREBARA DUX. B.M.

Female. Length 10¼ lines.—Black: the thorax and abdomen shining; the head closely and strongly punctured; the antennæ, mandibles and anterior margin of the clypeus ferruginous; the mandibles punctate-striate, with four stout acute teeth at their inner margin. Thorax: the disk with distant punctures; two impressed lines on the mesothorax anteriorly, in the centre, which unite and terminate in the middle of the disk, and a line on each side extending to the posterior margin, the wings brown, the posterior pair and apex of the anterior wings palest, the nervures ferruginous; the legs dark fusco-ferruginous, with the tarsi palest. Abdomen large, much wider than the thorax, finely and

sparingly punctured, the base of the second and third segments impunctate, the apical margins of the segments obscurely rufo-piceous; the nodes of the petiole incrassate, the upper surface of the second node inclined obliquely forwards.

Hab. Port Natal.

Genus 6. ŒCODOMA.

Formica, pt., *Linn. Syst. Nat.* i. 964 (1766).
Atta, pt., *Fabr. Syst. Piez.* 421 (1804).
Œcodoma, *Latr. Nouv. Dict. d'Hist. Nat.* xxiii. (1818).

We are indebted to Mr. H. W. Bates for the following observations on the economy of the species of this genus; but notwithstanding these various communications, as well as other recorded histories, we are still at a loss for satisfactory information, such as would enable us to unite the various sets of workers with their legitimate parents; we are acquainted with three very distinct forms of males as well as females, but have no data whereby to connect these with the working communities.

Division 1.

The first submarginal cell of unequal width, pointed at the base and transverse at the apex; the recurrent nervure received within the first submarginal cell near its apex.

1. ŒCODOMA CEPHALOTES. Pl. X. figs. 21–23. B.M.

Formica cephalotes, *Linn. Syst. Nat.* i. 964. 15 ☿, major.
Fabr. Syst. Ent. 395. 22; *Spec. Ins.* i. 493. 31; *Mant.* i. 310. 38; *Ent. Syst.* ii. 362. 52.
De Geer, Mem. Ins. iii. 604. 5. t. 31. f. 11 ☿.
Oliv. Encycl. Méth. vi. 499. 47.
Latr. Hist. Nat. Fourm. 222. pt. 9. f. 57. A.
Formica fervens, *Drury, Illust. Exot. Ins.* iii. t. 42. f. 4 ♀.
Formica migratoria, *De Geer, Ins.* iii. 604. 5. t. 31. f. 11 ☿.
Formica grossa, *Oliv. Encycl. Méth.* vi. 499. 35 ♀; *Fabr. Ent. Syst.* ii. 359. 40.
Atta cephalotes, *Fabr. Syst. Piez.* 421. 1 ☿.
Latr. Gen. Crust. et Ins. iv. 124.
Guér. Icon. Règ. Anim. iii. 422. 1.
Erichs. Faun. et Flo. Brit. Guiana, iii. 593.
Madame Merian, tab. 18; *Seba*, iv. t. 99. f. 6.
Hab. Brazil; Mexico.

"*Œcodoma cephalotes*. is the common species of the genus; it is abundant in light soils, and especially cultivated grounds. Its formicaria are very extensive and wholly subterraneous, the site being marked on the surface of the ground only by a mound of little elevation formed of earth, generally lighter in colour than the surrounding soil, raised in little ridges and turrets. The space occupied by the mound is always cleared of foliage; the entrances appear to be at a distance from the mounds, and consequently there must be a system of subterranean highways. The *Œcodomæ* appear to be exclusively herbivorous, and, like the *Cryptoceri*, have no stings; what they do with the immense amount of cut leaves they are perpetually conveying to their abode it is impossible to divine. Probably they prepare food for the larvæ from the leaves; but besides leaves and fruits, individuals in the processions may be frequently seen conveying dried twigs and leaves, and in rare instances, dried fragments of insects; what they especially delight in is the dried grain of the Mandiocca meal, the general food of the inhabitants of this country. This insect, from its ubiquity, immense numbers, eternal industry, and its plundering propensities, becomes one of the most important animals in Brazil; its immense hosts are unceasingly occupied in defoliating trees, and those most relished by them are precisely the useful and cultivated kinds; they have regular divisions of labourers: numbers mount the trees and cut off the leaves in irregularly rounded pieces about the size of a shilling, another relay of labourers carry them off as they fall; sometimes these latter get behindhand with their work, and the fallen pieces accumulate to a great heap; such heaps used to puzzle me when I met with them on first arriving in this country. I had thought *Œcodoma* exclusively herbivorous, but I on one occasion surprised one dragging off the dead body of a fine Lamia nearly an inch long."

The following remarks apply to the workers of the species which appears to be the *Œcodoma cephalotes* of authors; they certainly apply to that species of this catalogue:—

"I send you all the different sizes of this species taken from the formicarium. The medium-sized individuals were occupied in cutting pieces of leaf of the size of a sixpence. The minute individuals were few in number at the leaf-cutting operations, but were in vast numbers about the entrance to the dome of the formicarium: the very large-headed ones were not engaged in leaf-cutting, nor were they to be seen in the processions; they were only to be seen on disturbing the nest.

"I had observed during several months the workers of this species, at a place in the forest, occupied in cutting pieces of the foliage of trees, and always crossing the pathway in the same

direction along a fallen tree. I at length determined to trace the procession through the jungle to their formicarium; this I soon discovered; it was very different in appearance and much inferior in size to the vast mounds thrown up by the species found at Para and Santarem (*E. cephalotes*?). The dome of the nest of this species is only about a foot in diameter, and about the same in height; it is formed of light earth, matted and thatched as it were with pieces of leaves which the workers cut and carry. I watched the heavily-laden fellows as they came trooping in, and found they all deposited their load in a heap close to the mound. I then searched for the entrance to the interior; I found, after removing a little of the surface, three burrows, each about an inch in diameter; half a foot downwards all three united in one tubular burrow, about four inches in diameter; to the bottom of this I could not reach when I probed with a stick to the depth of four or five feet. The tube of the main burrow was perfectly smooth, and covered with a vast number of workers of much smaller size than those occupied in conveying the leaves: these minute individuals were unmixed with any of the larger size. Afterwards, on probing lower into the burrow, up came, one by one, several gigantic fellows, out of all proportion larger than the largest of those at work outside, and which I could not have supposed to belong to the same species. Besides the greatly enlarged size of the head, the sculpture of the body is very different, and what struck me as very curious, they have an ocellus in the middle of the forehead; this latter feature, added to their startling appearance from the cavernous depths of the formicarium, gave them quite a Cyclopean character. There are, however, individuals intermediate in size between these and the other workers."

An examination of the workers collected by Mr. Bates shows, that although the smaller workers differ in size, from two-tenths of an inch to five-tenths, yet none of these have an ocellus in the forehead, and the larger individuals having an ocellus scarcely differ among themselves in size.

The large worker of this species may be known from that of *Œ. sexdentata*, by having an ocellus, a more polished head, and by having the mandibles of the same colour as the head, with the teeth black; *Œ. sexdentata* has the anterior margin of the face and the mandibles blackish-brown or black; the colour of the mandibles alone will serve to separate the small workers.

2. ŒCODOMA LÆVIGATA. Pl. X. fig. 24. B.M.

Worker major. Length 5½ lines.—Chestnut-red, nearly destitute of pubescence: the thorax, the two nodes, and the apical

segments of the abdomen with a few scattered erect hairs; the legs slightly pubescent, the hairs very fine and short; the head and first segment of the abdomen glassy smooth and shining. The head very large, more deeply impressed than in *cephalotes*, more swollen and rounded laterally, and armed behind with two acute spines. The thorax with two long spines anteriorly, two posteriorly, and with two minute ones placed a little before the middle towards the anterior pair; there are also two acute bent spines at the sides just above the anterior coxæ.

Worker minor.—Of an opake reddish-brown: head large, twice the width of the thorax, deeply notched above; the vertex transversely quadrate, the anterior angles acute, the posterior ones with a short curved acute spine; the antennæ slender, and quite as long as the body. The prothorax with two stout acute spines, curved forwards, behind each of which is a minute acute straight spine; a short acute spine on the sides above the anterior coxæ; the metathorax with two long, acute, nearly upright spines which are slightly curved inwards. The nodes of the abdomen subquadrate, the second about twice the width of the first, both with a sharp carina on their lateral margins, those on the second node terminating in a small tubercle; the abdomen globose.

Worker minima.—Very like the *worker minor*, but a little more than half the size.

These workers are placed together on the authority of Mr. H. W. Bates, who captured them at Santarem; whether they can possibly be mere varieties of the common *cephalotes*, it is impossible to determine without actual observation; the differently formed head, perfectly smooth and naked, as well as the smooth abdomen, appear to characterize a very distinct species.

3. Œcodoma sexdentata. Pl. X. fig. 19. B.M.

Formica sexdens, *Linn. Syst. Nat.* i. 964. 14 ☿.
Fabr. Syst. Ent. 395. 23; *Ent. Syst.* ii. 363. 23.
De Geer, Ins. iii. 608. pl. 31. t. 14.
Oliv. Encycl. Méth. vi. 500.
Formica sexdentata, *Latr. Hist. Nat. Fourm.* 228.
Atta sexdens, *Fabr. Syst. Piez.* 422. 2.

Hab. Cayenne; Surinam; Para; Rio; South America; St. Vincent's.

This is probably the large form of the worker of *Œcodoma abdominalis*, that which follows being the smaller form of the same species.

The Rev. Hamlet Clark says of this species: "Twenty years ago it was not known at Rio, except by name, as a pest in the

Minas district; during this time it has been gradually advancing across the country, or rather under the country, establishing everywhere colonies; and now, within the last two or three years, it has reached the Organ Mountains; where I found it in two localities. Mr. Heath, the proprietor of Constancia, has used all means to exterminate it, but without the least success; sometimes in a single night it will strip a whole orange or lemon tree of its leaves; a ditch of water round his garden which quite keeps out all other ants, is of no use: this species carries a mine below its bed without any difficulty,—indeed I have been assured again and again by sensible men, that it has undermined, in its progress through the country, the *great river Paraiba*, as broad as the Thames at London Bridge; at any rate, without anything like a natural or artificial bridge, it appears on the other side, and continues its course. Its food is principally vegetable—leaves of trees and plants. I have seldom, if ever, seen it carrying flies, as other ants do, to its burrow—always slices of leaf."

4. Œcodoma abdominalis. Pl. X. fig. 22. B.M.

Female. Length 10 lines.—This species is the same size as *cephalotes*; in all the examples examined the wings are paler, the abdomen less pubescent, its first segment longer, and the sides less rounded; in other respects they agree very closely; the present species is, however, usually of a brighter colour, particularly the abdomen, which is redder. Specimens have been received from various parts of South America. In the British Museum are several forms of workers, but which of them belong to this apparently distinct species, it is impossible to ascertain without direct observation of the colonies of the species.

5. Œcodoma coptophylla. B.M.

Atta coptophylla, *Guér. Icon. Règ. Anim.* iii. 422. 2 ☿.
Formica cephalotes, *Pohl & Kollar, Bras. vorz. läst. Ins.* p. 15. f. 10?

Hab. Brazil.

6. Œcodoma Colombica.

Atta Colombica, *Guér. Icon. Règ. Anim.* 422. 4 ☿.

Hab. Columbia.

7. Œcodoma Lebasii.

Atta Lebasii, *Guér. Icon. Règ. Anim.* iii. 422. 5 ☿.

Hab. Columbia.

8. ŒCODOMA INSULARIS.

Atta insularis, *Guér. Icon. Règ. Anim.* iii. 422. 3 ☿.

Hab. Cuba.

9. ŒCODOMA MEXICANA. Pl. X. fig. 20. B.M.

Atta fervens, *Say, Bost. Journ. Nat. Hist.* i. 290.

Female. Length 8–9 lines.—Obscurely ferruginous, nearly black; closely resembling *Œ. cephalotes*, but the thorax is more elongate; the second node of the abdomen wider, with the lateral angles produced and acute; the base of the abdomen truncated, the first segment longer than broad; in other respects resembling *Œ. cephalotes*, but more hairy or downy.

Male.—In size and form resembling the male of *Œ. cephalotes*?, but of a uniform pale reddish yellow; the second abdominal node much wider.

Hab. Mexico.

The insect described as *lævigata* is probably the worker of this species; in the Museum are several specimens from Mexico.

DIVISION 2.

The first submarginal of equal width throughout, transverse at both extremities, the recurrent nervure uniting with the transverse nervure at the base of the marginal cell; body tuberculate.

10. ŒCODOMA ASPERSA. Pl. X. fig. 17. B.M.

Female. Length 3½ lines.—Brown-black: the head and abdomen roughened, covered with short sharp spines; the mandibles, scape, sides of the face, its anterior margin, the carinæ between the antennæ and the spines on the vertex, ferruginous. Thorax ovate, with two bright ferruginous longitudinal lines on the mesothorax; the scutellum and post-scutellum ferruginous; a straight, stout, acute spine on each side of the thorax in front, and two longer bent acute ones on the metathorax, ferruginous; wings yellowish hyaline, the nervures pale ferruginous; the legs of moderate length, roughened with short spines and stiff hairs. Abdomen: the first node armed with a stout blunt spine on each side; the second node with numerous short spines on each side, the sides red; the first segment flattened towards the base, which has a ferruginous spot on each side; the apical margins of the segments more or less ferruginous.

Hab. Brazil.

The close resemblance between this species and *Œ. hystrix* leaves little doubt of the latter being the worker of the present

species; the neuration of the wings of *aspersa* is somewhat different to the typical form of *Œ. cephalotes*, and it might be desirable to form a subgenus for its reception; for the present, we retain them as a section only.

11. ŒCODOMA CORONATA. B.M.

Formica coronata, *Fabr. Syst. Piez.* p. 413. 70 ♀.

Hab. Brazil; Rio (Petrópolis). (Coll. Rev. Hamlet Clark.)

12. ŒCODOMA NIGRA. B.M.

Female. Length 6 lines.—Black: the mandibles ferruginous, longitudinally striated, and having two blunt teeth at their apex, their base, outer margins and apex black; two longitudinal carinæ on the front, which run irregularly and obliquely to the lateral posterior angles of the head, each carina is elevated into a spine or tooth opposite the eyes; the head is longitudinally strigose, and has a number of short spines at the posterior angles. Thorax: a short curved spine on each side in front, and two rather longer curved ones on the metathorax; the mesothorax and scutellum longitudinally covered with a series of irregular carinæ; the legs covered with short brown pubescence, the tarsi obscurely ferruginous. Abdomen globose, covered with irregular points and tubercles; the first node of the peduncle quadrate, and having a number of short points or tubercles; the second node transverse, and similarly tuberculate.

Hab. Brazil; Rio (Tejuca). (Coll. Rev. Hamlet Clark.)

13. ŒCODOMA HYSTRIX. Pl. X. fig. 18. B.M.

Formica hystrix, *Latr. Hist. Nat. Fourm.* 229 ♂.
Fabr. Syst. Piez. 414. 75 ♀.
Atta hystrix, *Halid. Trans. Linn. Soc.* xvii. p. 328 (1837).

Hab. South America; Brazil (Para). (Coll. H. W. Bates.)

Of this species Mr. Bates remarks—"This is a distinct species, offering precise characters in the thoracic spines, &c. I found a vast number on one occasion in a low meadow, carrying away fragments of fallen fruit; the whole were nearly of uniform size; I found none of the large-headed individuals."

14. ŒCODOMA RUGOSA. B.M.

Female. Length 3½ lines.—Pale red: the head roughened, with several short spines on the lateral margins of the vertex, two irregular ridges running backwards from the insertion of the antennæ, with irregular elevations or points between; the ocelli

distinct; the teeth of the mandibles and the eyes black. Thorax ovate, not narrowed behind as in the workers; the prothorax with an acute tooth on each side, and also one just above the insertion of each anterior coxa; the mesothorax with a few short scattered hairs on the disk; the metathorax with an acute tooth on each side near the insertion of the petiole of the abdomen; legs of moderate length, not elongated as in the workers. Abdomen: the upper surface irregular, with numerous pointed elevations and scattered, short, stiff hairs.

Hab. Brazil.

15. ŒCODOMA PALLIDA. B.M.

Worker major, length 2 lines. Worker minor, 1½ line.—This species very closely resembles *hystrix*; its largest worker, however, is smaller than the smallest of that species, and its small worker the most diminutive of the genus. Mr. Bates says, "Very similar to the former (*hystrix*) in the number of the thoracic spines, &c., but I think a distinct species. I found a procession of them in a sandy tract of ground; all the individuals were of a uniform pale colour."

Hab. Brazil (Santarem).

This is probably the worker of *Œ. rugosa.*

Subfam. 4. CRYPTOCERIDÆ.

Genus 1. CRYPTOCERUS.

Formica, pt., *Linn. Syst. Nat.* i. 965.
Cryptocerus, *Latr. Hist. Nat. Crust. et Ins.* xiii. 260.

Head more or less flattened above, quadrate or subquadrate, the sides expanded into flattened marginal plates, concealing or partly concealing the eyes. Antennæ incrassate; in repose, received into a deep channel extending from their base above the eyes towards the vertex; the scape of the antennæ grooved beneath for the reception of the basal joints of the flagellum. Labrum transverse, its anterior margin deeply emarginate. Labial palpi 3-jointed; maxillary palpi 5-jointed. Superior wings with one marginal and two submarginal cells. Abdomen oblong-ovate in the females, ovate in the males; the peduncle with two nodes.

1. CRYPTOCERUS ATRATUS. B.M.

Formica atrata, *Linn. Syst. Nat.* i. 965. 16 ☿.
Fabr. Syst. Ent. 395. 24; *Ent. Syst.* ii. 363. 54.

Formica atrata, *Christ, Naturg. Ins.* 516.
Oliv. Encycl. Méth. vi. 500. 49.
Latr. Hist. Nat. Fourm. 272. t. 12. f. 74 *a* ☿, 74 *b* ♀.
Formica quadridens, *De Geer, Ins.* iii. 609. 7. t. 31. f. 17–20.
Cryptocerus atratus, *Latr. Hist. Nat.* xiii. 260. t. 102. f. 1.
Fabr. Syst. Piez. 418. 1.
Klug, Ent. Mon. 260. 1.
St. Farg. Hym. i. 170. 1.
Guér. Icon. Règ. Anim. 424. t. 69. f. 3.
Spin. Mem. Accad. Torino, 2nd ser. xiii. 63. 47 (1853).
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 215 ♂ ♀ ☿.
Cryptocerus marginatus, *Fabr. Syst. Piez.* 419. 2 ♀.
Cryptocerus dubitatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 216 ♂.

Hab. Brazil; Surinam; Cayenne.

2. CRYPTOCERUS OCULATUS.

Cryptocerus oculatus, *Spin. Mem. Accad. Torino*, 2nd ser. xiii. 65. 48 ☿.
Cryptocerus æthiops, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 216. 3. pl. 20. f. 9 ☿ (1853).

Hab. Brazil (Para).

3. CRYPTOCERUS SERRATICEPS. B.M.

Female. Length 6 lines.—Jet-black: head depressed, slightly convex at the vertex; ocelli distinct; strongly punctured and slightly shining; the lateral margins elevated and finely serrated; deeply emarginate anteriorly; antennæ short, thick and clavate, the extreme apex ferruginous. Thorax shorter than the abdomen, the disk shining, with large scattered punctures; the lateral angles of the prothorax with a short, stout, acute spine; the metathorax with two short, straight, thick spines; wings hyaline, the nervures thick, and of a blackish-brown; a fuscous cloud occupying the marginal cell, and passing beyond to the apex of the wings; a narrow fuscous stain traverses all the nervures of the wings; the stigma black; the femora and tibiæ with their sides flattened, four-sided, with a few scattered pale setæ. Abdomen oblong-ovate, very smooth and shining, with scattered delicate punctures; the apical segments roughened, with their margins smooth and shining; the nodes of the petiole subglobose.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

4. CRYPTOCERUS CLYPEATUS. B.M.

Cryptocerus clypeatus, *Fabr. Syst. Piez.* 420. 3 ☿.
Perty, Del. An. Art. 136. t. 27. f. 4.
Klug, Ent. Mon. 207. 6.
Guér. Icon. Règ. Anim. 426. 6.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 217. 5. pl. 21. f. 1 ♀, 2 ♂, 5, 6 ☿.

Hab. Brazil (Santarem).

5. CRYPTOCERUS D'ORBIGNYANUS.

Cryptocerus D'Orbignyanus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 218. 11. pl. 19. f. 5 ♀.

Hab. South America.

6. CRYPTOCERUS QUADRIMACULATUS. B.M.

Cryptocerus quadrimaculatus, *Klug, Ent. Mon.* 215. 10 ♀.
Guér. Icon. Règ. Anim. 426.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 219. 12. pl. 19. f. 8 ♀.

Hab. Brazil (Villa Nova, Amazons). (Coll. H. W. Bates.)

7. CRYPTOCERUS QUADRIGUTTATUS.

Cryptocerus quadriguttatus, *Guér. Icon. Règ. Anim.* 425 ☿.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 217. 7.

Hab. Columbia; Bolivia.

8. CRYPTOCERUS ARGENTATUS. B.M.

Cryptocerus argentatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 218. 10. pl. 19. f. 7 ♀.

Hab. Columbia; Mexico.

9. CRYPTOCERUS ANGULATUS. B.M.

Worker. Length 4 lines.—Black: shining and finely punctured; head convex above, margined at the sides, truncate behind; the clypeus emarginate, above which is an opake triangular depression, and an abbreviated impressed line above it; the tips of the antennæ rufo-piceous. Thorax: the prothorax as broad as the head; the anterior margin arched, margined at the sides, and abruptly narrowed and depressed behind; the mesothorax with its lateral angles produced into flattened teeth or spines rounded at their apex; the metathorax transverse; narrowed at the base and notched at the sides, forming two blunt

teeth or spines; the legs with the sides flattened, thinly sprinkled with glittering scales. Abdomen ovate, emarginate at the base, also margined laterally; the nodes of the peduncle transverse, produced at the sides into stout bent spines, those on the first node longest; the punctures on the head, thorax and abdomen each contain a bright glittering scale.

Hab. Brazil (Tunantins). (Coll. H. W. Bates.)

10. CRYPTOCERUS ELONGATUS. B.M.

Cryptocerus elongatus, *Klug, Ent. Mon.* 214. 9 ☿
Guér. Icon. Règ. Anim. 426.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 218. 8.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

11. CRYPTOCERUS RIMOSUS.

Cryptocerus rimosus, *Spin. Mem. Accad. Torino*, xiii. 65. 49 ☿.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 223. 28.

Hab. Brazil (Para).

12. CRYPTOCERUS FEMORALIS. B.M.

Cryptocerus femoralis, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 219. 15. pl. 20. f. 3 ☿.

Hab. Columbia; Brazil (Tunantins). (Coll. H. W. Bates.)

13. CRYPTOCERUS CORDATUS.

Cryptocerus cordatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 220. 16. pl. 21. f. 3 ☿.

Hab. Brazil (Santarem).

14. CRYPTOCERUS MINUTUS. B.M.

Cryptocerus minutus, *Fabr. Syst. Piez.* 425. 5 ☿.
Klug, Ent. Mon. 203. 3.
Guér. Icon. Règ. Anim. 426. 2.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 221. 18.

Hab. South America (Villa Nova). (Coll. H. W. Bates.)

15. CRYPTOCERUS PUSILLUS. B.M.

Cryptocerus pusillus, *Klug, Ent. Mon.* 202. 2 ☿.
Guér. Icon. Règ. Anim. 426.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 220. 17. pl. 20. f. 8.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

16. CRYPTOCERUS OBTUSUS. B.M.

Worker. Length 2½ lines.—Opake black: head large, wider than the thorax or abdomen; the sides margined before the eyes and obscurely ferruginous, widely emarginate in front; the posterior lateral angles of the head rounded, emarginate between; the antennæ rufo-piceous at their apex. Thorax: the prothorax transverse, with two blunt teeth on each side; the mesothorax narrowed to the base of the metathorax, the latter with a short tooth at its basal angles, the apical angles being produced into long stout obtuse spines. Abdomen ovate, narrowly margined, and deeply emarginate at the base, the margins at the base ferruginous; the nodes of the peduncle transverse, the second node with a short stout spine at the sides; the entire insect sprinkled with minute glittering scales.

Hab. Brazil (Santarem). (Coll. H. W. Bates.)

17. CRYPTOCERUS PINELII.

Cryptocerus Pinelii, *Guér. Icon. Règ. Anim.* 425.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 221. 19.

Hab. Brazil (Moro Gueimado).

18. CRYPTOCERUS COMPLANATUS.

Cryptocerus complanatus, *Guér. Icon. Règ. Anim.* 424 ☿.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 221. 20.

Hab. Cayenne.

19. CRYPTOCERUS PAVONII.

Cryptocerus Pavonii, *Latr. Gen. Crust. et Ins.* iv. 132 ☿.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 221. 21.

Hab. South America.

20. CRYPTOCERUS DISCOCEPHALUS. B.M.

Cryptocerus discocephalus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 222. 23. pl. 20. f. 2 ☿.

Hab. Brazil (Villa Nova). (Coll. H. W. Bates.)

21. CRYPTOCERUS CAUSTICUS.

Formica caustica, *Pohl & Kollar, Bras. Ins.* 17. t. . f. 12 ☿.
Cryptocerus causticus, *Guér. Icon. Règ. Anim.* 426.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 222. 24.

Hab. Brazil.

22. CRYPTOCERUS ELEGANS. B.M.

Cryptocerus elegans, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 222. 25. pl. 19, f. 3 ☿.

Hab. Brazil (Villa Nova).

23. CRYPTOCERUS DEPRESSUS.

Cryptocerus depressus, *Klug, Ent. Mon.* 204. 4 ☿.
Guér. Icon. Règ. Anim. 426.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 219. 3.

Hab. Rio Janeiro.

24. CRYPTOCERUS MEMBRANACEUS. B.M.

Cryptocerus membranaceus, *Klug, Ent. Mon.* 208. 3 ☿.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 217. 6. pl. 21. f. 4.

Hab. Brazil; Rio (Tejuca). (Coll. Rev. Hamlet Clark.)

25. CRYPTOCERUS PALLENS.

Cryptocerus pallens, *Klug, Ent. Mon.* 206. 5.
Guér. Icon. Règ. Anim. 426.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 218. 9.

Hab. Brazil.

26. CRYPTOCERUS UMBRACULATUS.

Cryptocerus umbraculatus, *Fabr. Syst. Piez.* 420. 4 ☿.
Klug, Ent. Mon. 210. 8.
Guér. Icon. Règ. Anim. 426. 8.
Smith, Mon. Crypt. Trans. Ent. Soc. Lond. 2nd ser. ii. 219. 14.

Hab. South America.

27. CRYPTOCERUS UNIMACULATUS.

Cryptocerus unimaculatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 221. 22. pl. 19. f. 9 ☿.

Hab. Brazil.

28. CRYPTOCERUS HÆMORRHOIDALIS.

Formica hæmorrhoidalis, *Latr. Hist. Nat. Fourm.* 276.
Cryptocerus hæmorrhoidalis, *St. Farg. Hym.* i. 172. 3.

Hab. St. Domingo.

29. CRYPTOCERUS ARANEOLUS.

Cryptocerus araneolus, *Smith, Trans. Ent. Soc.* new ser. ii. 223. 27.

Hab. St. Vincent's.

30. CRYPTOCERUS PUBESCENS.

Cryptocerus? pubescens, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 223. 29. pl. 20. f. 4 ☿.

Hab. Adelaide.

Genus 2. MERANOPLUS.

Cryptocérus, pt., *Guér. Icon. Règ. Anim.* 425.
Meranoplus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 224 (1853).

1. MERANOPLUS PETIOLATUS.

Meranoplus petiolatus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 224. 2. pl. 20. f. 7 ☿.

Hab. Brazil.

2. MERANOPLUS BICOLOR.

Cryptocerus bicolor, *Guér. Icon. Règ. Anim.* 425.
Meranoplus bicolor, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. 224. 1.

Hab. India (Pondicherry).

3. MERANOPLUS CORDATUS.

Worker. Length 2 lines.—Chestnut-red: the thorax with the anterior lateral angles acute, and armed posteriorly with four spines. The head and thorax paler than the abdomen, the head very delicately reticulated; the eyes small, black, and placed backwards on the sides of the head towards the vertex; the clypeus widely truncate in front. Thorax slightly rounded in the middle in front; the sides narrowed and rounded to the base of the metathorax; the posterior margin transverse, at each of its lateral angles a curved acute spine, with a shorter spine a little beyond them; the truncation of the metathorax with a short acute spine about the middle on each side. Abdomen: the first node, viewed laterally, is wedge-shaped, the second subquadrate, its posterior margin produced into an acute spine; the anterior margin of the first node truncate; the abdomen heart-shaped; the entire insect sprinkled with erect pale hairs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

This is probably the worker of *M. castaneus*.

4. MERANOPLUS MUCRONATUS. B.M.

Worker. Length 2–2½ lines.—Head, thorax and legs ferruginous, the abdomen black; the thorax quadrate, each angle produced into a long acute spine; the head, thorax, and nodes of the peduncle coarsely rugose; the head narrowed before the eyes, and widely emarginate in front; the eyes prominent, behind them the margins of the head are widened, and again narrowed to the lateral angles, which are rounded; the head and thorax with a few scattered long reddish hairs. The hinder margin of the thorax with two short blunt spines in the middle, outside of each is a very minute tooth or spine; the metathorax smooth, shining, and concavely truncate; in the middle of the lateral margins of the truncation is a long slender acute spine; the legs and abdomen sprinkled with very long ferruginous hairs.

Hab. Malacca (Mount Ophir).

On a ticket attached to specimens of this species, Mr. Wallace writes, "House-Ant," but we have no further information.

5. MERANOPLUS CASTANEUS.

Female. Length 3½ lines.—Chestnut-red: head and thorax longitudinally subrugose; the metathorax with two small teeth or spines; the second node of the peduncle with a minute spine posteriorly; the flagellum obscurely ferruginous; the teeth and eyes black; the metathorax truncate, the centre of the truncation finely striated longitudinally; the legs with scattered pale hairs; the base of the femora obscurely ferruginous. Abdomen ovate, finely punctured, and sprinkled with long pale hairs; the nodes of the peduncle rugose; the first, viewed laterally, wedge-shaped, and produced into an angular tooth or process at its base; the second subquadrate; both are sprinkled with long erect hairs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

6. MERANOPLUS GRACILIS. B.M.

Worker. Length 2¼ lines.—Black: head convex, subopake, and finely punctured; eyes large, prominent, placed forwards on the sides of the head, the posterior angles rounded; the clypeus concave, or depressed in the middle, its anterior margin widely but slightly emarginate. Thorax longitudinally rugose, intermixed with deep punctures, elongate and narrowed to the base of the mesothorax; the anterior margin of the prothorax arched, with the lateral angles subacute; the posterior lateral angles of

the mesothorax tuberculate; the metathorax with the basal lateral angles rounded, and the apical ones produced into long stout acute spines. Abdomen ovate; the first node of the peduncle rugose, much narrower than the second, which is truncate at the base, rounded at the sides and behind.

Hab. Brazil (Ega). (Coll. H. W. Bates.)

7. MERANOPLUS DIFFORMIS. B.M.

Worker. Length 1 line.—Head and abdomen reddish-brown; antennæ, mandibles, thorax and legs pale ferruginous; the head oblong, with a number of shallow depressions above; the lateral margins deeply contracted about the middle, opposite the eyes, the sides expanded and rounded before the contraction and narrowly margined behind it; the vertex emarginate behind. Thorax with depressions on the disk, rounded in front and obliquely truncate behind; a deep contraction between the meso- and metathorax, three obtuse teeth or spines on the margins on each side; the metathorax with a longitudinal depression in the centre; the legs elongate, without spines or hairs. Abdomen subglobose, widest towards the apex; the first node of the peduncle small and transverse, the second large, subglobose, and with a depression above; there is also a central depression at the base of the abdomen.

Hab. Santarem.

8. MERANOPLUS SINGULARIS. Pl. XIII. f. 6–10.

Worker. Length $2\frac{3}{4}$ lines.—Reddish-brown, rugose and hispid. The female is a little larger, of the same colour, and similarly rugose and hispid.

Genus 3. CATAULACUS.

Formica, pt., *Latr. Hist. Nat. Fourm.* 275 (1802).
Cryptocerus, pt., *St. Farg. Hym.* i. 171 (1836).
Cataulacus, *Smith, Mon. Crypt. Trans. Ent. Soc. Lond.* 2nd ser. ii. (1853).

1. CATAULACUS TAPROBANÆ.

Cataulacus Taprobanæ, *Smith, Mon. Crypt. Trans. Ent. Soc.* 2nd ser. ii. 225. 1. pl. 20. f. 10 ♀.

Hab. Ceylon.

2. CATAULACUS GUINEENSIS.

Cataulacus Guineensis, *Smith, Mon. Crypt. Trans. Ent. Soc.* new ser. ii. 225. 2. pl. 20. f. 5 ♀.

Hab. Tropical Western Africa.

3. CATAULACUS PARALLELUS.

Cataulacus parallelus, *Smith, Mon. Crypt. Trans. Ent. Soc.* 2nd ser. ii. pl. 19. f. 6.

Hab. Cape of Good Hope.

4. CATAULACUS GRANULATUS.

Formica granulata, *Latr. Hist. Nat. Fourm.* 275. pl. 12. f. 75.
Cryptocerus granulatus, *St. Farg. Hym.* i. 171. 2.
Cataulacus granulatus, *Smith, Mon. Crypt. Trans. Ent. Soc.* new ser. ii. 226. 4.

Hab. India.

5. CATAULACUS HORRIDUS. B.M.

Worker. Length 3 lines.—Black: the posterior angles of the head spinose, the margins of the head crenulated; the thorax armed posteriorly with two elongate, stout, acute spines; the antennæ short, thick and clavate, their apex rufo-testaceous; the head reticulated, produced before the eyes and widely truncated anteriorly, the lateral angles of the truncation rounded, the lateral margins of the head with a short spine before the eyes; the posterior margin of the vertex emarginate its entire width, the lateral angles produced into long acute spines. Thorax ruggedly sculptured on the disk, narrowed to the apex of the mesothorax, which is separated from the hinder portion by a deep transverse incision, the posterior angles produced into long acute spines. The nodes of the peduncle rugose; the abdomen rounded, emarginate, and striated at the base; the entire insect sprinkled with short, erect, white setæ.

Hab. Borneo (Sarawak).

6. CATAULACUS RETICULATUS.

Worker. Length 1½–2 lines.—Black: finely reticulated, the abdomen very delicately so; the margins of the head and thorax crenulated, the latter armed with two long, stout, straight, parallel spines; the antennæ short, thick and clavate; the clypeus widely emarginate, the lateral margins of the head with a minute angular spine or tooth before the eyes. Thorax: the anterior margin slightly rounded; the sides rounded, the margins with a short

tooth anteriorly and posteriorly; the anterior tibiæ and tarsi, and the apical joints of the intermediate and posterior tarsi ferruginous. Abdomen ovate, margined at the sides and emarginate at the base.

Var. minor. The scape, apical joint of the flagellum, the head, before the eyes, and the legs, ferruginous.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.).

7. CATAULACUS INSULARIS.

Male. Length 3 lines.—Black: the lateral angles of the vertex produced into stout acute spines; the metathorax bispinose. The head and thorax rugose; the antennæ, eyes, mandibles, tibiæ and tarsi, ferruginous; the eyes large and prominent; the clypeus produced, truncate anteriorly; the sides of the head behind the eyes serrated; beneath the lateral spines of the vertex are two smaller spines; the wings pale flavo-hyaline, the nervures scarcely discernible; the metathorax emarginate its entire width, with an acute spine at the lateral angles. The nodes of the abdomen rugose; the first node oblong-quadrate, the second nearly quadrate; the abdomen reddish at the base, and, as well as the nodes, thinly sprinkled with erect whitish hairs.

Hab. Borneo (Sarawak). (Coll. W. W. Saunders, Esq.)

Genus 4. ECHINOPLA.

Echinopla, *Smith, Proc. Linn. Soc.* ii. 79 (1857).

Head transverse; eyes small, placed laterally, high on the head, on the top of short pedestals; antennæ 12-jointed, inserted forwards on the head, wide apart; labial palpi 4-jointed, the three basal ones of about equal length, clavate, the apical joint as long as the two preceding joints united. Maxillary palpi 5-jointed, elongate, the three apical joints long and slender, the two basal ones much shorter and stouter. Mandibles short, stout, and of equal width throughout, armed with four teeth at the apex. Thorax oblong-quadrate; legs of moderate length; tarsi 5-jointed, each tibia armed with a single spine at the apex. Abdomen globose; peduncle formed of a single node; the first segment very large, concealing the other segments beneath it.

1. ECHINOPLA MELANARCTOS. B.M.

Echinopla melanarctos, *Smith, Proc. Linn. Soc.* ii. 79. 1 ☿.

Worker. Length 2½–3 lines.—Black: body hispid; the palpi pale testaceous; on each side of the face anteriorly is a thin

raised plate, beneath which the antennæ are inserted; the sides of the head longitudinally and coarsely rugose; the head above, the thorax and abdomen, covered with short blunt spines, each of the spines having a long stiff hair at its apex; the node of the abdomen transverse, terminating on each side in a long sharp spine; the abdomen globose, beneath, smooth and shining.

Hab. Singapore.

2. ECHINOPLA PALLIPES. B.M.

Echinopla pallipes, *Smith, Proc. Linn. Soc.* ii. 80. 2 ☿.

Worker. Length 2½ lines.—Black: body hispid; eyes prominent. Abdomen globose, node of the peduncle transverse, produced on each side into an acute spine; legs pale testaceous. Head and thorax rugose; the abdomen vermiculate, and covered with slight elevations placed in great regularity over the entire upper surface, each elevation terminating in a hair. The scape and the mandibles ferruginous, the eyes very prominent, the palpi and legs pale testaceous, with the tarsi rufo-piceous. Abdomen obscurely rufo-piceous.

Hab. Borneo (Sarawak).

The sculpture of this insect is difficult to describe: the head and thorax are the most coarsely rugose, the rugosity being regularly interspersed with short blunt spines, each having a single hair springing from its summit.

3. ECHINOPLA STRIATA. B.M.

Echinopla striata, *Smith, Proc. Linn. Soc.* ii. 80. 3 ☿.

Worker. Length 3 lines.—Black: head, thorax and abdomen longitudinally striated; thorax oblong-quadrate, the scale of the peduncle transverse. The head with an obscure blue tinge; the palpi pale testaceous. Thorax: the margins denticulate; the anterior margin rounded, the lateral ones narrowed to the middle, and again widened posteriorly; above very slightly convex; the division between the pro- and mesothorax distinctly marked by a suture; between the meso- and metathorax is a deep strangulation; the peduncle of the abdomen transverse, incrassate, and armed on each side with a straight stout spine. Abdomen orbiculate; the entire insect thinly sprinkled with erect black hairs.

Hab. Malacca.

APPENDIX.

15. ODONTOMACHUS BISPINOSUS. B.M.

Worker. Length 3 lines.—Black: the mandibles, antennæ and legs ferruginous. The head deeply emarginate behind, longitudinally and finely striated, with the sides behind the eyes smooth and shining. The thorax rugose, with two minute spines on the metathorax. Abdomen smooth and shining, with the apex pale testaceous; the node of the peduncle armed above with two stout acute spines, directed outwards.

Hab. Brazil (Ega).

This very distinct species we have just received from Mr. Bates; at its side on the same piece of card is a specimen of a species of *Cylistes*, a genus of *Histeridæ*; this seems to indicate some connexion between them; probably the Beetle was found in the nest of the Ant, but we have no information on the subject.

3. ANOMMA RUBELLA.

Anomma rubella, *Savage, Proc. Acad. Nat. Sci. Philad.* iv. 196 ♀ (1850).

Hab. Africa (West Coast of the Gaboon River).

At page 200 of the Proceedings of the Academy is a paper, which suggests the identity of *Anomma* with *Dorylus*; this is founded on the fact of Dr. Savage having found specimens of *Dorylus* in company with *Anomma rubella*; and in a small phial forwarded to the Society, containing the *Anomma*, were three specimens of *Dorylus planiceps*, which Dr. Savage considers to be the perfect insect. Notwithstanding this opinion and the details which follow, I must state my doubts of there being any connexion between these insects; they were not found together in a nest, but on the ground; and I am at present ignorant of any such disparity in size, or even an approach to it, occurring in the whole group of the *Formicidæ*, more particularly between *males* and *workers*. I must add, that I do not consider the evidence sufficient: I should certainly expect to find the male possessing the same number of joints in the palpi as the worker, which in this case is not so: *Anomma* has 2 joints in both the labial and maxillary palpi; in *Dorylus* I can only discover 1 labial and 2 maxillary joints. In India, where *Dorylus* is common, *Anomma* has

not been discovered. Should, however, the opinion of Dr. Savage prove to be correct, we may reasonably expect that *Labidus* may prove to be the male of *Eciton*. I think it is more probably its parasite.

Genus MYRMECOCYSTUS.

Myrmecocystus, *Wesm. Bull. Acad. Roy. de Brux.* v. (1838) p. 766.
Lucas, Bull. Ent. pl. 54; *Ann. Soc. Ent. Fr.* (1855).

"The first abdominal segment of one node; the mandibles triangular and much toothed; abdomen swollen at times like a balloon, and then perfectly transparent. In Mexico called *hormigas miéleras* or *mochileras*, *i. e.* honey-ants or pouched ants, their abdomen containing a sufficiently agreeable honey."

MYRMECOCYSTUS MEXICANUS.

Myrmecocystus mexicanus, *Wesm. Bull. Acad. Brux.* (1838) p. 770. pl. fig. ☿.

Hab. Mexico.

Only workers of this singular species of Ant are described; they are of two very distinct forms; the plate which illustrates the paper exhibits the small worker of the ordinary form, but the larger worker is represented with its abdomen swollen into an immense globular receptacle; this is effected by the distension of the membrane which connects the segments. The account forwarded to M. Wesmael by M. de Normann, the discoverer of the species, is, that the latter individuals are inactive, do not quit the nest, and that their sole occupation is to elaborate a kind of honey, which they discharge into receptacles.

The *Crematogaster inflatus* of this Catalogue, page 136, is a species which probably has workers that perform a similar operation, but in this case it is rendered even more remarkable from the receptacle or laboratory being a swollen bladder-like formation on the metathorax of the insect: this singular apparatus is furnished with a small circular orifice at the posterior lateral angles, from which the saccharine fluid doubtless exudes; portions of crystallized particles are visible within the orifices, and frequently are also scattered over the whole surface of the inflation; we may therefore reasonably conclude, that this insect elaborates a suitable and necessary aliment for the nourishment of the young brood.

Page 36.—*Formica sericata* belongs to the genus *Polyrhachis*; specimens in the British Museum have been received recently from the island of Aroo (Moluccas).

EXPLANATION OF THE PLATES.

PLATE I.

Fig.
1. Nest of *Crematogaster Montezumia*, half the natural size.
2. Nest of *Polyrhachis textor*, natural size.

PLATE II.

1. Nest of *Formica gibbosa*, natural size.
2. Profile of the Ant, magnified.

All the figures in Plates III. to XII. are magnified, unless the contrary is stated.

PLATE III.

1. Anterior wing of *Formica rufa*, female.
2. " " " *herculanea*, female.
3. " " " *smaragdina*, female.
4. " " " *viatica*, female.
5. " " *Polyrhachis militaris*, female.
6. " " *Tapinoma erratica*, female.
7. Mandible of *Formica rufa*, worker.
8. Scale of the petiole of *Formica rufa*, worker major.
9. " " " " worker minor.
10. " " " *sanguinea*, worker.
11. " " " *umbrata*, worker.
12. " " " *cunicularia*, worker.
13. " " " *cunicularia*, male.
14. " " " *fusca*, male.
15. " " " *herculanea*, worker.
16. " " " " female.
17. " " " *ligniperda*, female.
18. " " " *exsecta*, worker.
19. Head of *Formica exsecta*, worker.
20. Maxillary palpi of *Formica exsecta*, worker.

Fig.
21. Labial palpi of *Formica exsecta*, worker.
22. Antennæ of *Formica fusca*, male.
23. „ „ *cunicularia*, male.
24. Abdomen of *Formica virescens*, male.
25. Antennæ of *Formica virescens*, male.
26. Scale of the petiole of *Formica virescens*, female.
27. Lateral view of the scale of *Formica virescens*, female.
28. Head of an Ant, showing the position of the frontal area at *a*.
29. Head of an Ant, with the frontal area obsolete at A.
30. *Formicæ gigas*, worker major, natural size.

PLATE IV.

1. Anterior wing of *Polyergus rufescens*, female.
2. Head of *Polyergus rufescens*, male.
3. Scale of the petiole of *Polyergus rufescens*, male.
4. Head of *Polyergus rufescens*, female.
5. Antennæ of *Polyergus rufescens*, female.
6. Labial palpi of *Polyergus rufescens*, female.
7. Maxillary palpi of *Polyergus rufescens*, female.
8. Scale of the petiole of *Polyergus rufescens*, female.
9. Mandible of *Polyergus rufescens*, worker.
10. Labial palpi of *Polyrhachis*.
11. Maxillary palpi of *Polyrhachis*.
12. Thorax of *Polyrhachis mutatus*, worker.
13. Scale of the petiole of *Polyrhachis mutatus*, worker.
14. „ „ „ *Gagates*, worker.
15. „ „ „ *hastatus*, worker.
16. Thorax of *Polyrhachis hastatus*, worker.
17. Scale of the petiole of *Polyrhachis aciculatus*, worker.
18. Thorax of *Polyrhachis aciculatus*, worker.
19. „ „ *bihamatus*, worker.
20. Thorax and abdomen of *Polyrhachis furcatus*, worker.
21. Scale of the petiole of *Polyrhachis laboriosus*, worker.
22. „ „ „ „ worker: lateral view.
23. „ „ „ *constructor*, worker.
24. „ „ „ *piliventris*, worker.
25. „ „ „ *inermis*, worker.
26. Thorax of *Polyrhachis inermis*, worker.
27. Scale of the petiole of *Polyrhachis defensus*, worker.
28. Lateral view of the scale of *Polyrhachis rufipes*, worker.
29. Scale of the petiole of *Polyrhachis tyrannicus*, worker.
30. Lateral view of the thorax and abdomen of *Polyrhachis consimilis*, worker.

Fig.
31. Scale of the petiole of *Polyrhachis consimilis*, worker.
32. „ „ „ *dives*, worker.
33. Lateral view of the scale of *Polyrhachis dives*, worker.
34. Scale of the petiole of *Polyrhachis Philippinensis*, worker
35. „ „ „ *militaris*, female.
36. „ „ „ „ male.
37. „ „ „ *villipes*, worker.
38. Thorax of *Polyrhachis villipes*, worker.
39. Scale of the petiole of *Polyrhachis vigilans*, worker.
40. „ „ „ *lacteipennis*, female.
41. „ „ „ *viscosus*, worker.
42. „ „ „ *lævissimus*, worker.
43. „ „ „ *Sumatrensis*, worker.
44. Thorax and scale of the petiole of *Polyrhachis malignus*, female.
45. Thorax and scale of the petiole of *Polyrhachis Pandarus*, worker.
46. Scale of the petiole of *Polyrhachis femoratus*, worker.
47. „ „ „ *cyaniventris*, worker.
48. Thorax of *Polyrhachis carinatus*, worker.
49. Scale of the petiole of *Polyrhachis carinatus*, worker.

PLATE V.

1. *Dolichoderus attelaboides*, ♀.
2. Head of the male of *Dolichoderus attelaboides*.
3. Abdomen of the male of *Dolichoderus attelaboides*.
4. Head of *Odontomachus hæmatodes*, worker.
5. Mandible of *Odontomachus hæmatodes*, worker.
6. Scale of the petiole of *Odontomachus hæmatodes*, worker.
7. Wing of *Odontomachus hæmatodes*, female.
8. Scale of the peduncle of *Odontomachus simillimus*, female.
9. Wing of *Odontomachus simillimus*, female.
10. Profile of *Odontomachus sævissimus*, worker.
11. Profile of the thorax of *Odontomachus sævissimus*, female.
12. Head of *Odontomachus maxillaris*, worker.
13. Scale of the peduncle of *Odontomachus maxillaris*, worker.
14. Mandible of *Odontomachus maxillaris*, worker.
15. Profile of *Odontomachus quadrispinosus*, worker.
16. Abdomen and scale of the peduncle of *Odontomachus quadrispinosus*, worker.
17. Thorax of *Odontomachus quadrispinosus*, worker.
18. *Drepanognathus saltator*, worker.
19. Mandible of *Drepanognathus saltator*, worker.

The measures of the insects in this Plate are taken from the tip of the mandibles to that of the abdomen.

PLATE VI.

Fig.

1. *Eciton crassicornis*, worker major.
2. Antennæ of *Eciton crassicornis*, worker major.
3. Labium and labial palpi of *Eciton crassicornis*, worker major.
4. Maxilla and maxillary palpus of *Eciton crassicornis*, worker major.
5. Mandible of *Eciton hamata*.
6. Head of *Eciton rapax*, worker.
7. Antennæ of *Eciton rapax*, worker.
8. „ „ *curvidentata*, worker.
9. Maxillary palpus of *Ponera contracta*, worker.
10. Labium and labial palpi of *Ponera contracta*, worker.
11. Wing of the female of *Ponera contracta*, worker.
12. Antennæ of *Ponera contracta*, worker.
13. Head of *Ponera denticulata*, worker.
14. Mandible of *Ponera denticulata*, worker.
15. Labium and labial palpi of *Ponera tarsata*.
16. Maxilla and maxillary palpus of *Ponera tarsata*.
17. „ „ „ „ *metallica*.
18. Labium and labial palpi of *Ponera metallica*.
19. Labium and labial palpus of *Ponera Æthiopica*.
20. Maxilla and maxillary palpus of *Ponera Æthiopica*.
21. Labium and labial palpus of *Ponera scalprata*.
22. Maxilla and maxillary palpus of *Ponera scalprata*.
23. *Ponera crudelis*, worker.
24. Abdomen of *Ponera crudelis*, worker.
25. *Ponera pedunculata*, worker.

PLATE VII.

1. Head of *Plectroctena mandibularis*, worker.
2. Labium and labial palpi of *Plectroctena mandibularis*, worker.
3. Maxilla and maxillary palpus of *Plectroctena mandibularis*, worker.
4. Mandible of *Plectroctena mandibularis*, worker.
5. Abdomen and node of the petiole of *Plectroctena mandibularis*, worker.
6. Labium and labial palpi of *Paraponera clavata*, worker.
7. Maxillæ and maxillary palpi of *Paraponera clavata*, worker.
8. Maxillary palpus of *Paraponera clavata*, worker.
9. Wing of *Paraponera clavata*, female.
10. *Ectatomma tuberculata*, female.
11. Labium and labial palpi of *Ectatomma tuberculata*, female.
12. Maxilla and maxillary palpus of *Ectatomma tuberculata*, female.

Fig.
13. Wing of *Ectatomma tuberculata*, female.
14. Head, thorax and abdomen of *Pachycondyla crassinoda*, ♀.
15. Antennæ of *Pachycondyla crassinoda*, female.
16. Wing of *Pachycondyla crassinoda*, female.
17. Abdomen of *Pachycondyla simillima*, female.
18. Wing of *Pachycondyla simillima*, female.
19. Labium and labial palpi of *Pachycondyla crassinoda*, female.
20. Maxilla and maxillary palpus of *Pachycondyla crassinoda*, female.
21. *Amblyopone Australis*, female.
22. Wing of *Amblyopone Australis*, female.
23. Male of *Amblyopone Australis*.
24. Antennæ of *Amblyopone Australis*, male.

PLATE VIII.

1. *Anomma arcens*, worker major.
2. Head of *Anomma Burmeisteri*, worker.
3. Head of *Anomma arcens*, worker.
4. *Typhlopone lævigata*, worker.
5. Wing of *Myrmica scabrinodis*, female.
6. Maxillary palpus of *Myrmica scabrinodis*.
7. Labial palpus of *Myrmica scabrinodis*.
8. Wing of *Myrmica lævinodis*.
9. Antennæ of *Myrmica scabrinodis*, male.
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12. Antennæ of *Myrmica lobicornis*, worker.
13. Wing of *Myrmica nitidula*, female.
14. Antennæ of *Myrmica nitidula*.
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18. Mandible of *Myrmica acervorum*.
19. Antennæ of *Myrmica acervorum*.
20. Labium and labial palpi of *Myrmica sublævis*.
21. Maxilla and maxillary palpus of *Myrmica sublævis*.
22. Mandible of *Myrmica sublævis*.
23. Another view of the mandible of *Myrmica sublævis*.
24. Antennæ of *Myrmica sublævis*.
25. Wing of *Myrmica fugax*, female.
26. Antennæ of the male of *Myrmica fugax*.
27. Maxillary palpus of *Myrmica fugax*.
28. Labial palpus of *Myrmica fugax*.

PLATE IX.

Fig.

1. *Crematogaster inflatus*, worker.
2. Wing of *Crematogaster castaneus*, ♀.
3. Wing of *Crematogaster scutellaris*, ♀.
4. Labial palpus of *Crematogaster sordidulus*, ☿.
5. Maxillary palpus of *Crematogaster sordidulus*, ☿.
6. Antennæ of *Crematogaster sordidulus*, ☿.
7. Thorax and abdomen of *Crematogaster scutellaris*, ☿.
8. Wing of *Myrmecina Latreillei*, ♀.
9. Mandible of *Myrmecina Latreillei*.
10. Antennæ of *Myrmecina Latreillei*.
11. Maxillary palpus of *Myrmecina Latreillei*.
12. Labial palpus of *Myrmecina Latreillei*.
13. *Pheidole Janus*, ☿ major.
14. Mandible of *Pheidole Janus*.
15. *Pheidole Janus*, ☿ minor.
16. Mandible of *Pheidole Janus*, ☿ minor.
17. Antennæ of *Atta Janus*, ☿ major.
18. Maxillary palpus of *Pheidole pusilla*, ☿.
19. Labial palpus of *Pheidole pusilla*, ☿.
20. Wing of *Pheidole pusilla*, ♀.
21. *Pheidole cephalica*, ☿ major.
22. „ „ ☿ minor.
23. Mandible of *Pheidole cephalica*, ☿ minor.
24. Wing of *Atta barbara*, ♀.
25. Labial palpus of *Atta testaceo-pilosa*, ☿.
26. Maxillary palpus of *Atta testaceo-pilosa*, ☿.

PLATE X.

1. Wing of *Myrmecia pyriformis*, ♀.
2. Antennæ of *Myrmecia pyriformis*, ♀.
3. Mandible of *Myrmecia pyriformis*, ♀.
4. Head of *Myrmecia pyriformis*, ♀.
5. Abdomen of *Myrmecia pyriformis*, ♀.
6. *Myrmicaria brunnea*, ♀.
7. Labial palpi of *Myrmicaria brunnea*, ♀.
8. Maxillary palpi of *Myrmicaria brunnea*, ♀.
9. Profile of *Physatta dromedarius*, ♀.
10. Wing of *Physatta dromedarius*, ♀.
11. Antennæ of *Physatta dromedarius*, ♀.
12. *Carebara lignata*, ♀.
13. Labial palpi of *Carebara lignata*, ♀.
14. Maxillary palpus of *Carebara lignata*, ♀.
15. Antennæ of *Carebara lignata*, ♀.

Fig.
16. Wing of *Œcodoma cephalotes*, ♀.
17. Profile of *Œcodoma aspersa*, ♀.
18. „ „ *hystrix*, ☿.
19. „ „ *sexdentata*, ☿.
20. Abdomen of *Œcodoma Mexicana*, ♀.
21. „ „ *cephalotes*, ♀.
22. „ „ *abdominalis*, ♀.
23. Head of *Œcodoma cephalotes*, worker major.
24. „ „ *lævigata*, worker minor.
25. Head and thorax of *Pseudomyrma cephalica*, ♀.
26. Abdomen of *Pseudomyrma cephalica*, ♀.

PLATE XI.

1. *Cryptocerus discocephalus*, ♂.
2. „ „ worker major.
3. „ „ worker minor.
4. Mandible of *Cryptocerus atratus*, ♀.
5. Labial palpi of *Cryptocerus atratus*, ♀.
6. Maxillary palpus of *Cryptocerus atratus*, ♀.
7. *Cryptocerus serraticeps*, ♀.
8. „ *minutus*, worker minor.
9. „ *pusillus*, ☿.
10. *Cataulacus parallelus*, ♀.
11. Head of *Cataulacus Taprobanæ*, ☿.
12. Thorax of *Cataulacus Taprobanæ*, ☿.

PLATE XII.

1. Head of *Meranoplus*, ☿.
2. „ *Cataulacus*, ☿.
3. *Cryptocerus minutus*, worker major.
4. „ *angulatus*, ☿.
5. *Meranoplus petiolatus*, ♀.
6. Antennæ of *Meranoplus petiolatus*, ♀.
7. *Meranoplus gracilis*, ☿.
8. „ *difformis*, ☿.
9. Antennæ of *Meranoplus difformis*.
10. „ *Cataulacus horridus*.
11. „ *Meranoplus bicolor*.
12. *Cryptocerus obtusus*, ☿.

PLATE XIII.

1. *Polyrhachis bispinosus*, ☿.
2. Scale of the petiole, viewed in front.
3. Lateral view of the same.

Fig.
4. *Formica solitaria*, ☿.
5. Head of *Formica solitaria*.
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7. Antennæ of *Meranoplus singularis*, ♀.
8. Head of *Meranoplus singularis*, ☿.
9. Antennæ of *Meranoplus singularis*, ☿.
10. Mandible of *Meranoplus singularis*, ☿.
11. *Pseudomyrma faber*, ☿.
12. „ *cladoica*, ☿.
13. „ *vidua*, ♂.
14. *Cryptocerus striatus*, ☿.

PLATE XIV.

Nest of *Crematogaster arboreus*, with a portion of the outer shell or covering removed at the lower extremity, to show the character of the interior structure: drawn one-third of the natural size.

ERRATA.

Alter the numbers of the Subfamilies as follows:—

Page 1. Family FORMICIDÆ.
„ 76. Subfamily 1. PONERIDÆ.
„ 114. Subfamily 2. MYRMICIDÆ.

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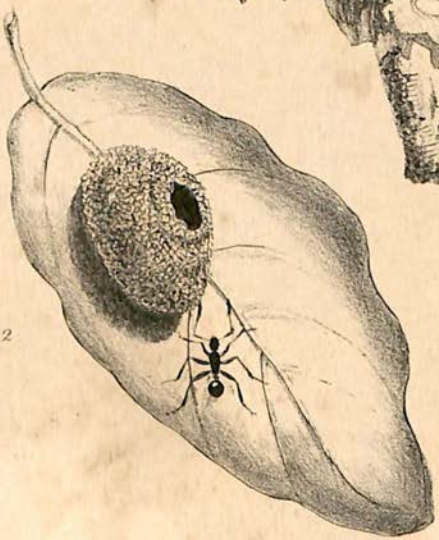

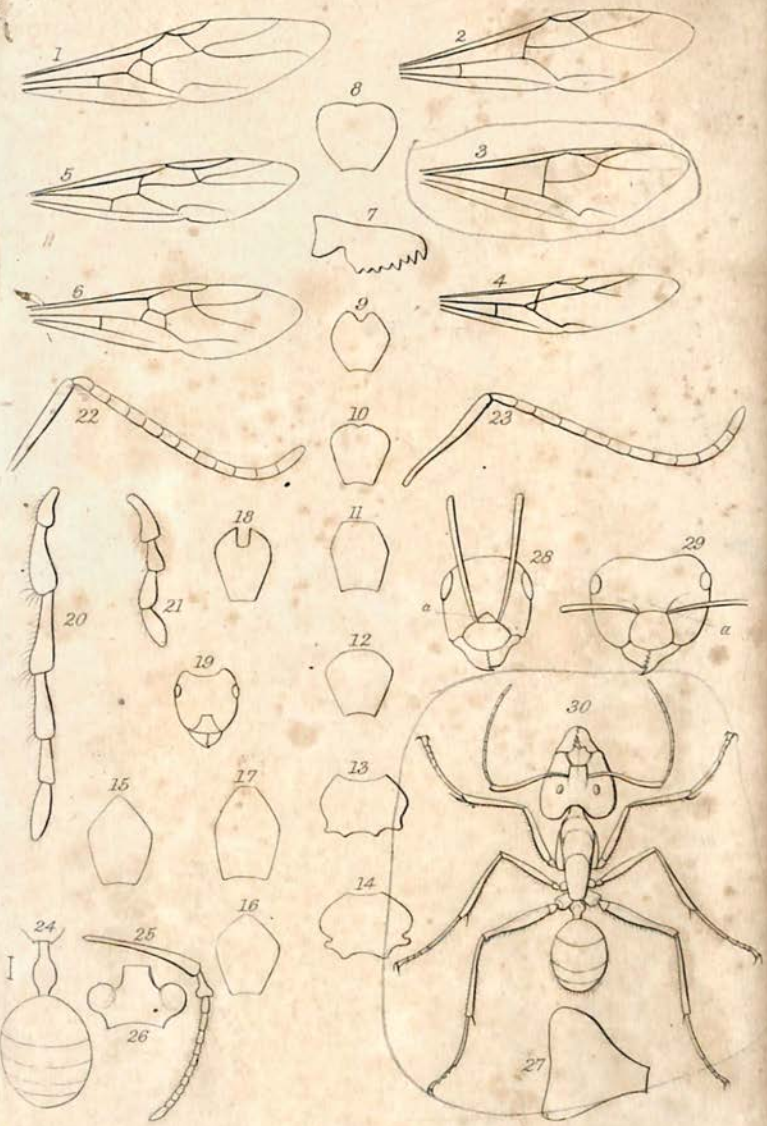
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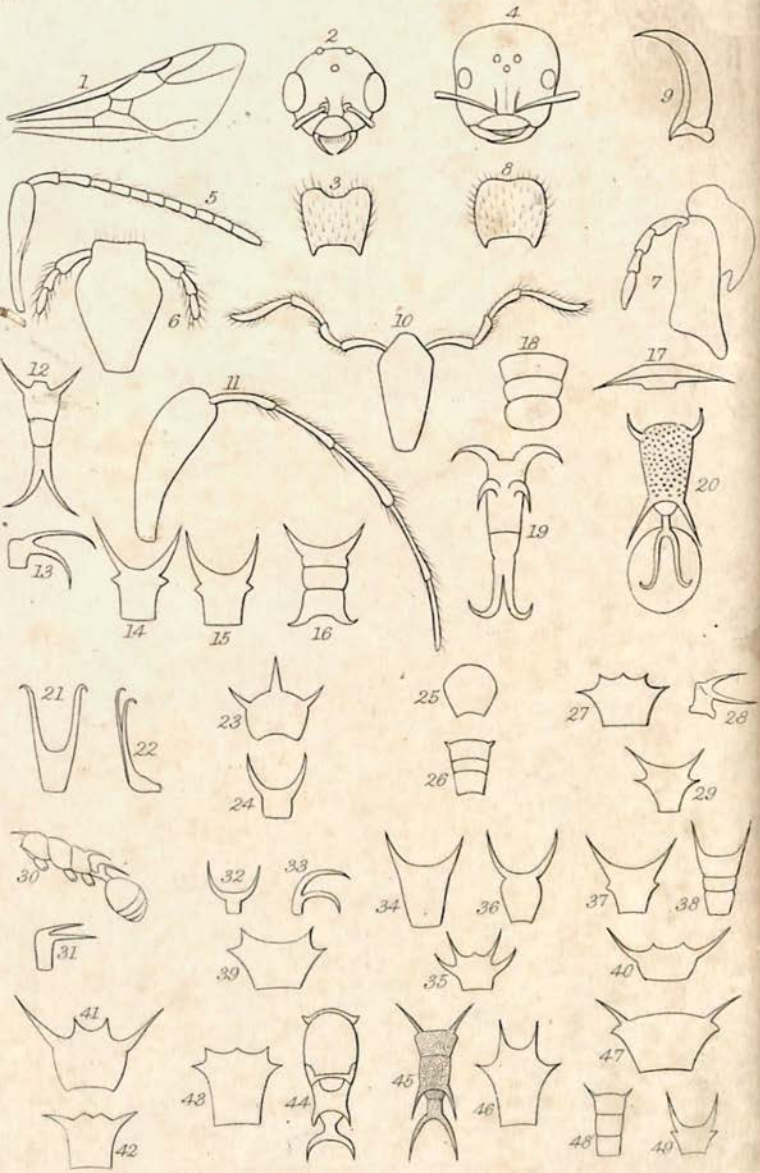
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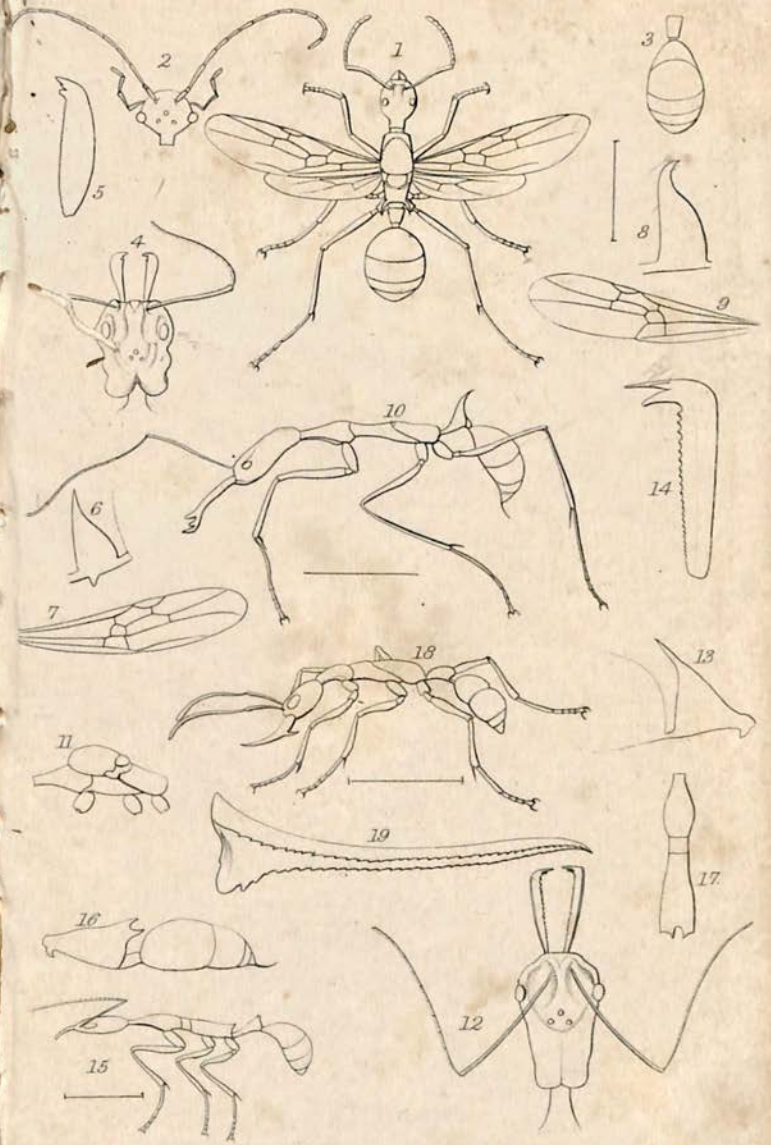
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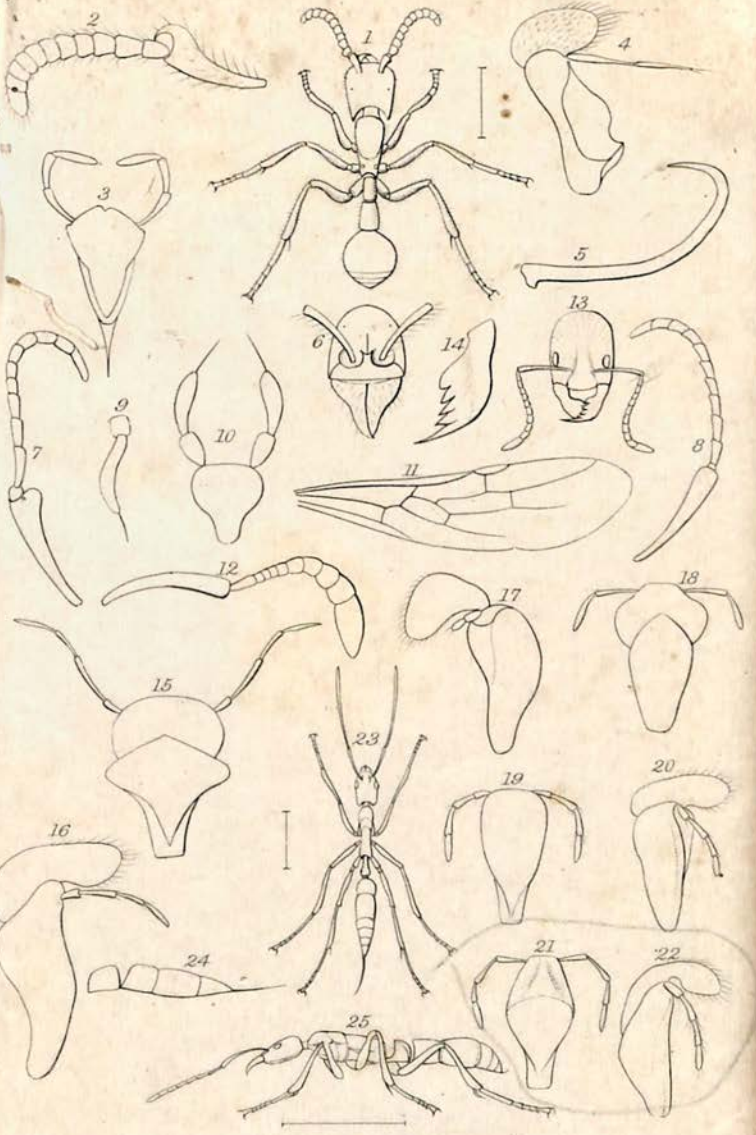
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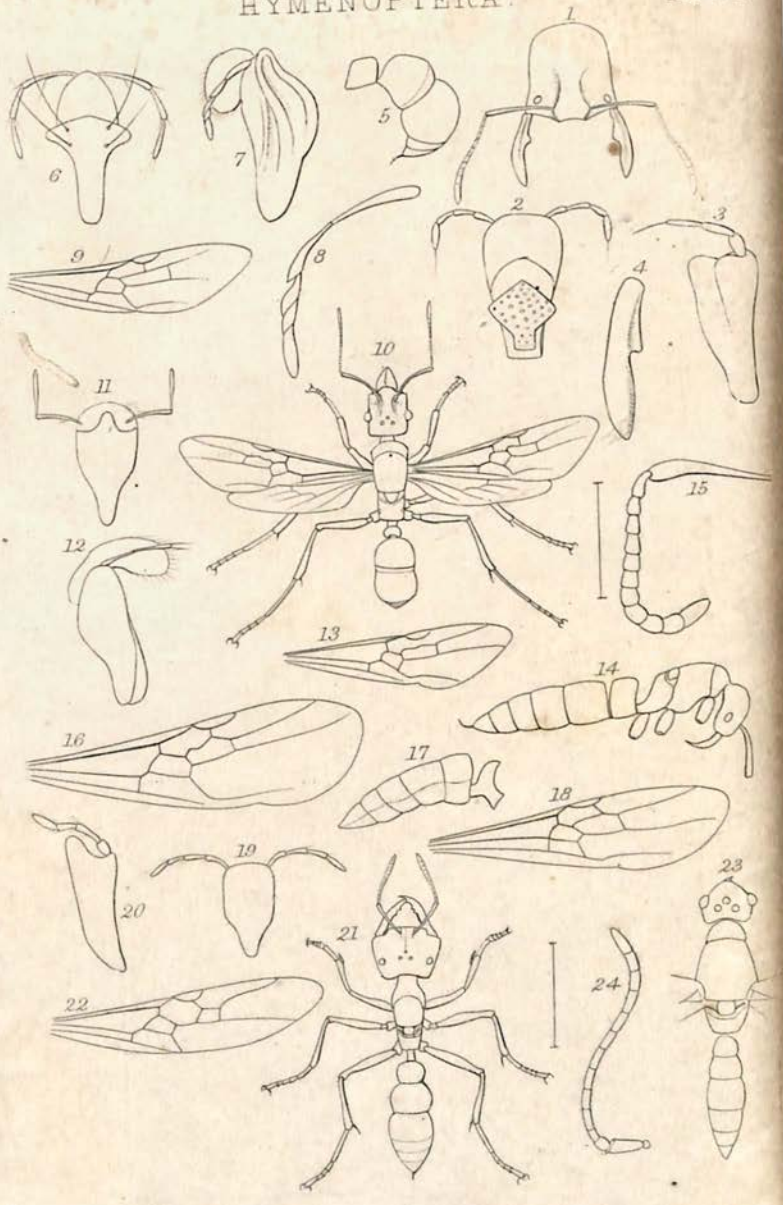
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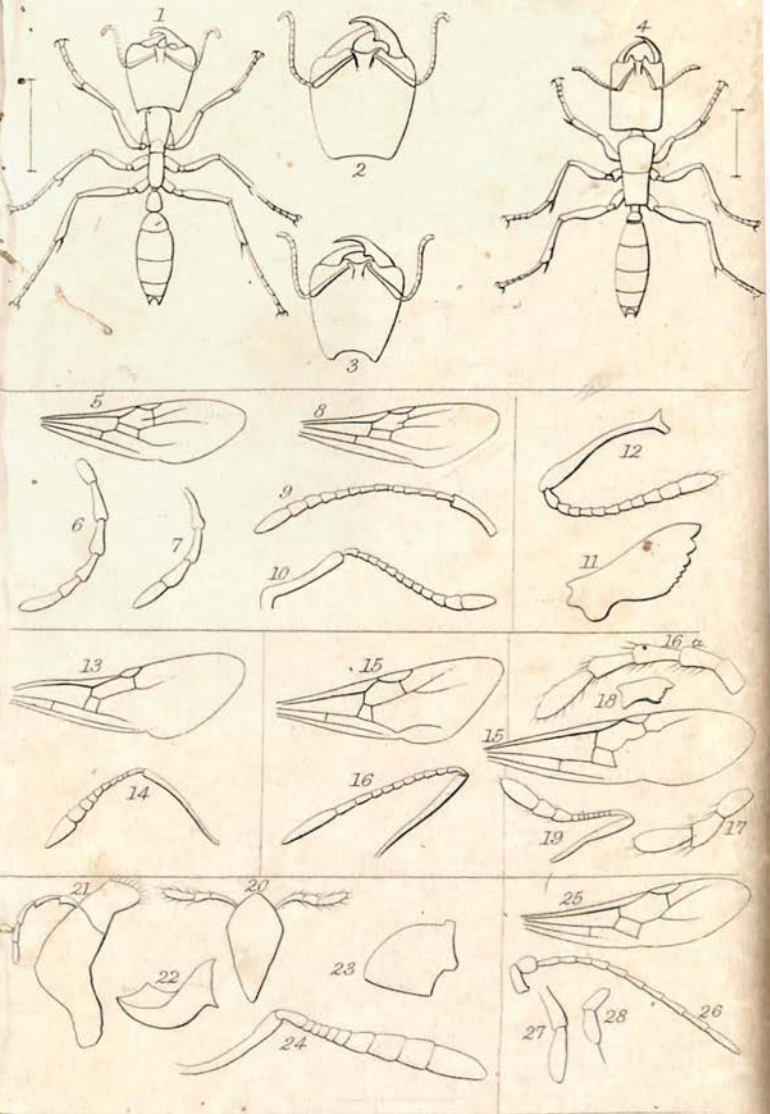
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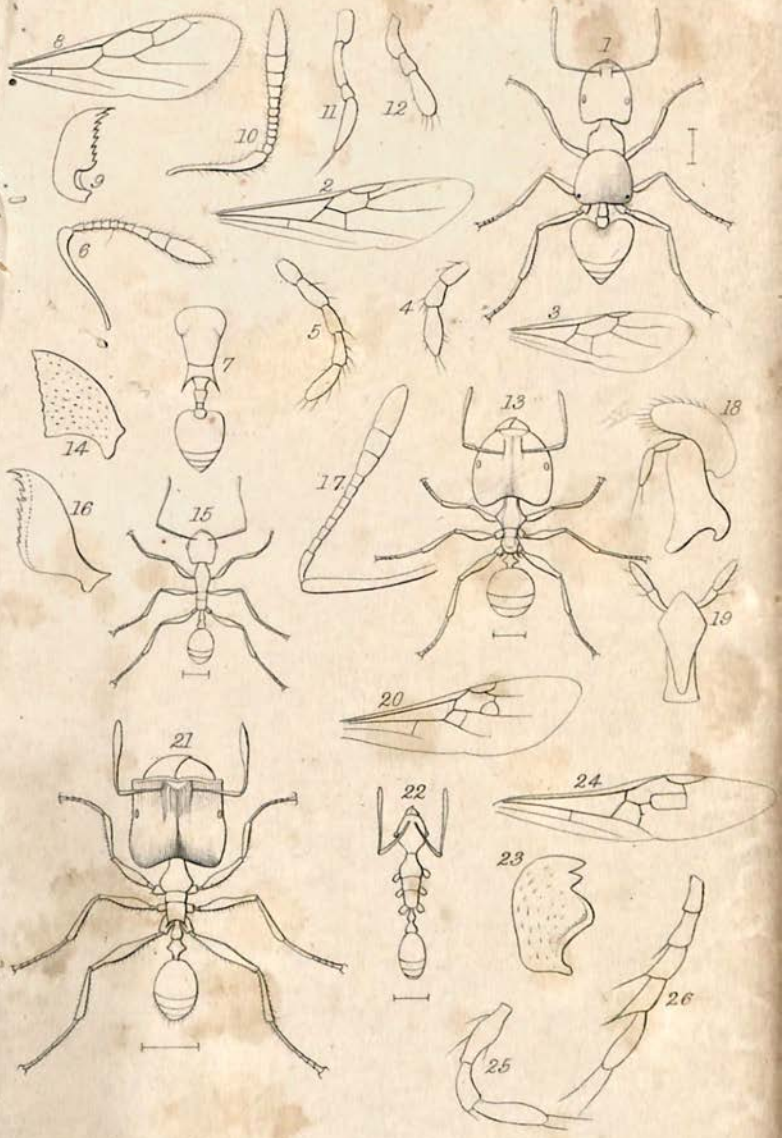
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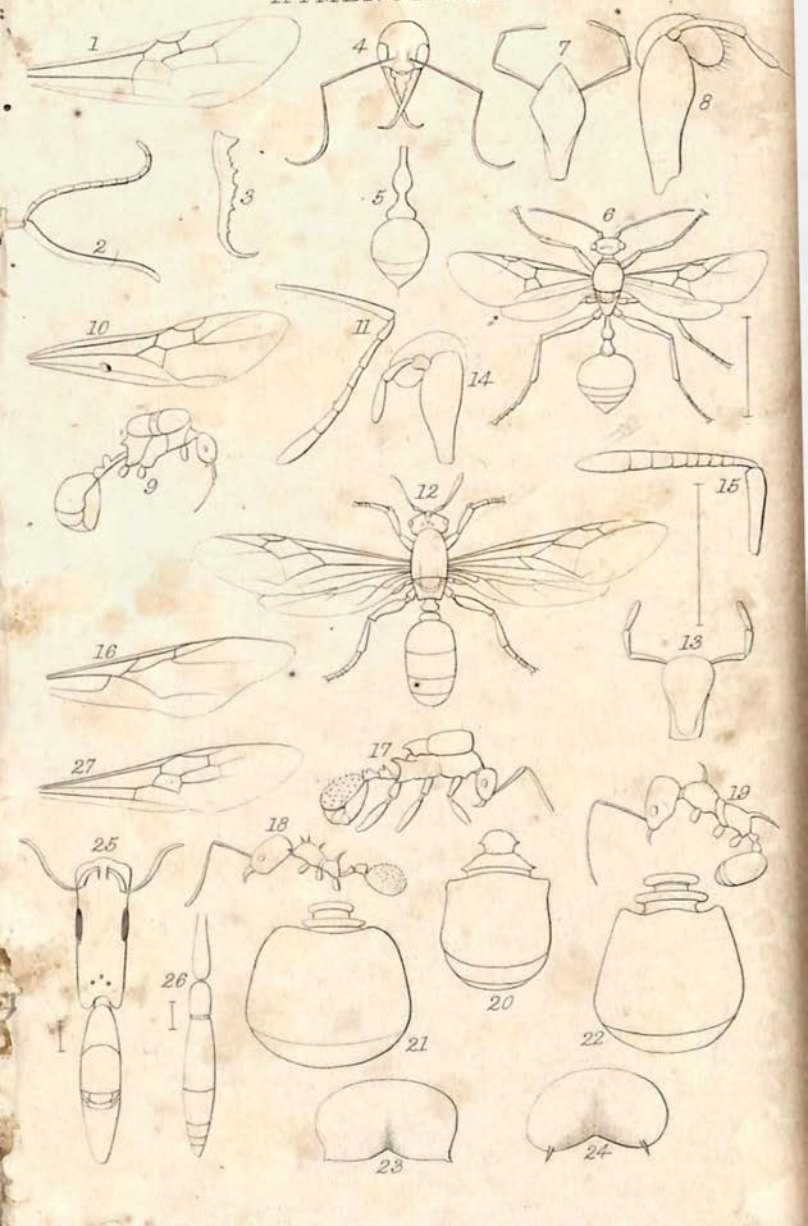
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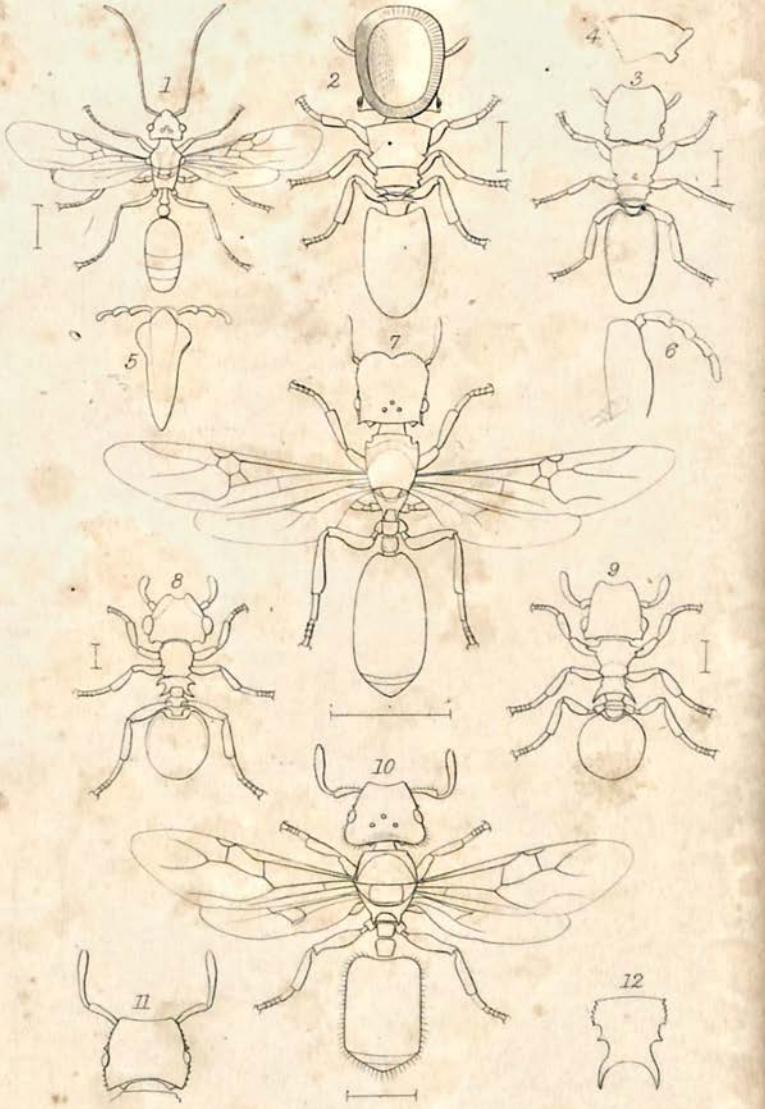
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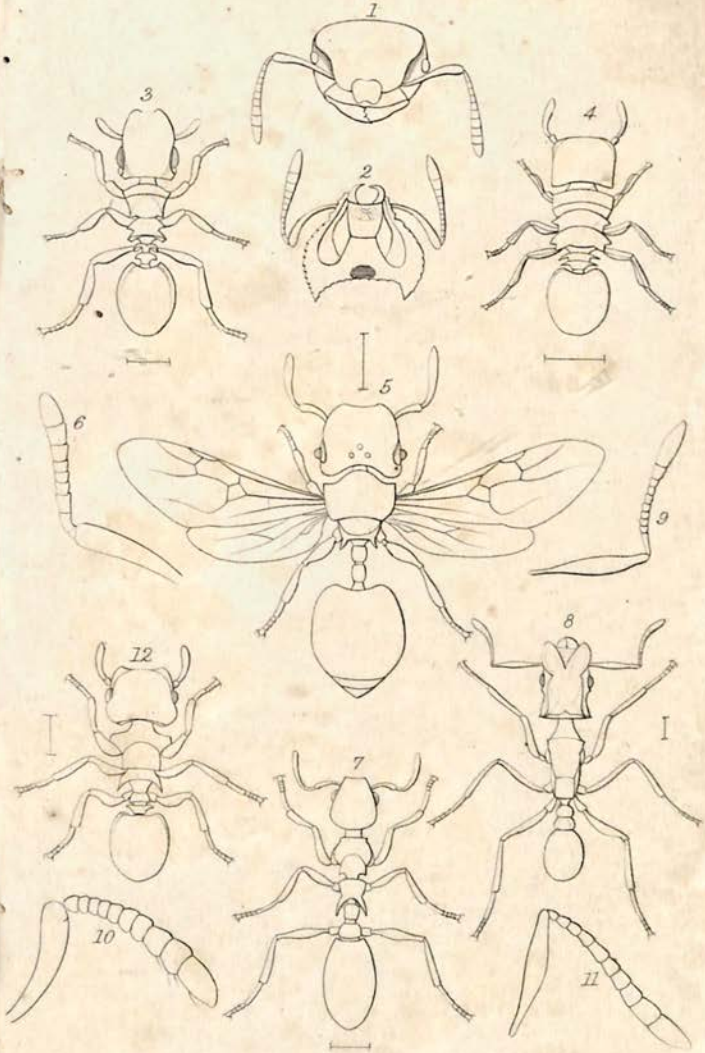
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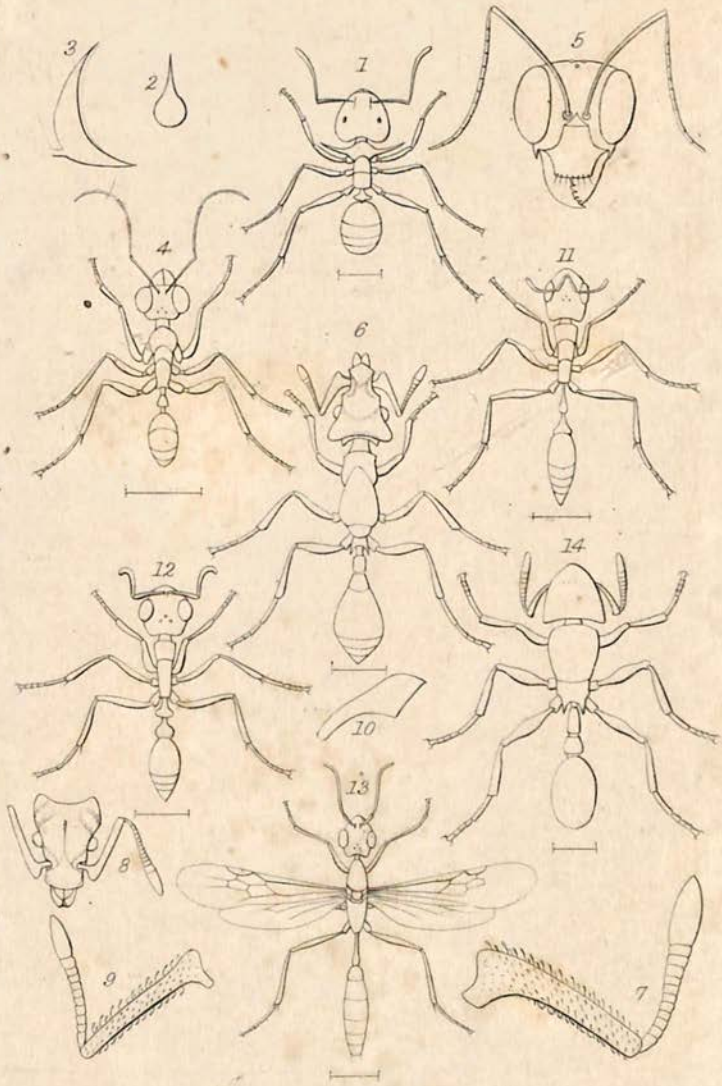
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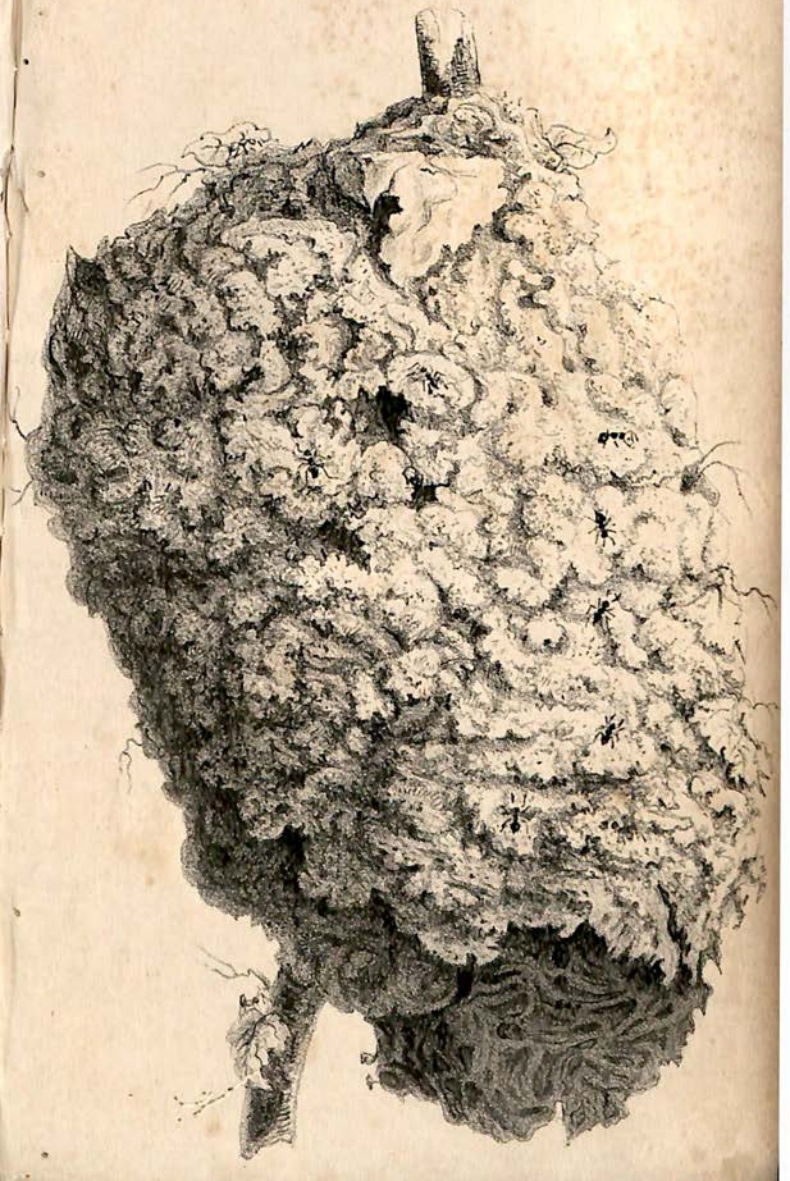

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Transactions of the Entomological Society.

CATALOGUE

OF

HYMENOPTEROUS INSECTS

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

BY

FREDERICK SMITH, V.P. ENT. SOC.

PART VII.

DORYLIDÆ AND THYNNIDÆ.

LONDON:

PRINTED BY ORDER OF THE TRUSTEES.

1859.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

PREFACE.

THE object of the present Catalogue is to give a complete list of all the known genera and species of DORYLIDÆ and THYNNIDÆ, including those which have been previously recorded, together with descriptions of such as appear to be hitherto undescribed.

The letters B.M. in the margin indicate the species contained in the Collection of the British Museum.

JOHN EDWARD GRAY.

1st June, 1859.

CATALOGUE

OF

HYMENOPTERA.

Div. II. ACULEATA.

Tribe HETEROGYNA, *Latr.*

Family 5. DORYLIDÆ, *Shuck.*

Genus 1. DORYLUS.

Vespa, pt., *Linn. Mus. Lud. Ulric. Reg.* p. 409 (1764).
Mutilla, pt., *Linn. Syst. Nat.* i. 967 (1766).
Dorylus*, *Latr. Hist. Nat. Ins.* xiii. 260 (1802).

Sect. 1.—*Peduncle cup-shaped, much smaller than the second segment.*

1. Dorylus helvolus. B.M.

Vespa helvola, *Linn. Mus. Lud. Ulric. Reg.* 412. 5.
Mutilla helvola, *Linn. Syst. Nat.* i. 967. 8.
Fabr. Mant. i. 313. 18.
Christ. Naturg. der Bienen, &c., 151.
Dorylus helvolus, *Fabr. Ent. Syst.* ii. 365. 1; *Syst. Piez.* 427. 1.
Coqueb. Icon. dec. 2. pl. 16. f. 1.

* This genus at present consists of males only. Dr. Savage considers the other sexes as constituting the genus *Anomma*; this, however, requires confirmation.

Dorylus helvolus, *Latr. Hist. Nat.* xiii. 260; *Gen. Crust. et Ins.* iv. 124.
Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 315. 2 (1840).
Westw. Arc. Ent. i. 79. 2.

Hab. Cape of Good Hope (Port Natal).

2. DORYLUS AFFINIS. B.M.

Dorylus affinis, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 316. 3 (1840).
Westw. Arc. Ent. i. 79. 3.

Hab. Africa (Gambia).

SECT. 2.—*Peduncle cup-shaped, nearly as large as the following segment.*

3. DORYLUS NIGRICANS. B.M.

Dorylus nigricans, *Illig. Mag.* i. 188. 18.
Fabr. Syst. Piez. 427. 2.
Latr. Gen. Crust. et Ins. iv. 124; *Nouv. Dict. d'Hist. Nat.* 2nd ed. 9. 556.
Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 271. 1 (1840).
Westw. Arc. Ent. i. 79. 1.

Hab. Sierra Leone.

SECT. 3.—*Peduncle quadrate; mandibles slender and much acuminated.*

4. DORYLUS GLABRATUS. B.M.

Dorylus glabratus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 317. 4 (1840).
Westw. Arc. Ent. i. 79. 4.

Hab. Africa (Gambia).

5. DORYLUS JUVENCULUS. B.M.

Dorylus Juvenculus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 318. 5 (1840).
Westw. Arc. Ent. i. 80. 5.

Hab. Barbary.

6. DORYLUS LABIATUS. B.M.

Dorylus labiatus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 319. 6 (1840).
Westw. Arc. Ent. i. 80. 6.

Hab. India (Poonah and Assam).

7. Dorylus Hindostanus. Plate I. fig. 1.

Length 1 inch.—Rufo-fuscous, smooth, and covered with fine glittering downy pile: mandibles slender and acuminate at the apex; the face, base of the mandibles, the coxæ, and apex of the abdomen with long curling pale yellow hair; face and forehead slightly prominent; the ocelli in an equilateral triangle, the face deeply sulcated in front of the anterior one; the antennæ setaceous, the scape about half the length of the flagellum. Thorax gibbous in front, the scutellum transverse; the metathorax abruptly truncated, the margin of the truncation fringed with pale hairs; wings hyaline, nervures brown, the radial nervure extending a little beyond the inner angle of the marginal cell; the legs castaneous. Abdomen elongate and cylindrical, the pedunele quadrate-convex; compressed beneath into a subtriangular form; the peduncle much narrower than the following segment; the terminal segment very pilose.

Hab. India (Punjaub).

This species is most closely allied to the *D. Juvenculus*, Shuck., but may be distinguished by the different form of the under side of the peduncle; its forehead is less convex, and its peduncle narrower in proportion to the following segment.

Sect. 4.—*Peduncle quadrate; mandibles broad and nearly triangular.*

8. Dorylus orientalis. B.M.

Dorylus Orientalis, *Westw. Proc. Zool. Soc.* 1835, p. 72.
Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 320. 7 (1840).
Westw. Arc. Ent. i. 80. 7.

Hab. India (Bengal).

9. Dorylus longicornis. B.M.

Dorylus longicornis, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 321. 8 (1840).
Westw. Arc. Ent. i. 80. 8.

Hab. India (Bengal).

10. Dorylus attenuatus.

Dorylus attenuatus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 322. 9 (1840).
Westw. Arc. Ent. i. 80. 9.

Hab. Africa (Gambia?). (Coll. F. Smith.)

11. DORYLUS ATRICEPS.

Dorylus atriceps, *Shuck. Ann. Nat. Hist.* 1st ser. v. 323. 10 (1840).
Westw. Arc. Ent. i. 80. 10.

Hab. Africa (Gambia). (Coll. F. Smith.)

SECT. 5.—*Peduncle cup-shaped, as large as the following segment; the mandibles broad and nearly triangular.*

12. DORYLUS ATRATUS.

Length 9 lines.—Black, with a silky brown pubescence; elongate and cylindrical: head as wide as the thorax; the ocelli in a triangle on the vertex, which is very convex; antennæ short and setaceous, the scape more than half the length of the flagellum. Thorax: the mesothorax with an impressed longitudinal line on each side, two-thirds of its entire length, terminating at the base of the scutellum; wings blackish brown, with a slight violet iridescence, the nervures black; the recurrent nervure inserted a little beyond the middle of the first submarginal cell; femora elongate, triangular, much narrowed at the apex. Abdomen cylindrical; the peduncle cup-shaped, nearly as large as the second segment, its posterior margin rounded; beneath compressed into an angular form, and densely pubescent.

Hab. Old Calabar. (Coll. F. Smith.)

Genus 2. RHOGMUS.

Rhogmus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 323. 4 (1840).

1. RHOGMUS FIMBRIATUS. Plate I. fig. 2. B.M.

Rhogmus fimbriatus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 325. 1 (1840).
Westw. Arc. Ent. i. 80. 1.

Hab. Africa (Gold Coast; Gambia).

Genus 3. LABIDUS*.

Labidus, *Jurine, Hym.* p. 282. (1808).

SECT. 1.—*Peduncle of the abdomen subtriangular and concave above.*

1. LABIDUS FARGEAVII.

Labidus Fargeavii, *Shuck. Ann. Nat. Hist.* 1st ser. v. 198. 1 (1840).

* The females of this genus are not known. Mr. Shuckard has indicated their probable connexion with the genus *Typhlopone*.

Labidus Fargeavii, *St. Farg. Hym.* i. 229, nec *Jurine*.
Westw. Arc. Ent. i. 74. 1.

Hab. Brazil (St. Catherine).

2. LABIDUS JURINII.

Labidus Jurinii, *Shuck. Ann. Nat. Hist.* 1st ser. v. 198. 2 (1840).
Westw. Arc. Ent. i. 75. 3.

Hab. South America (Demerara); Brazil.

3. LABIDUS BURCHELLII. Plate I. fig. 3.

Labidus Burchellii, *Westw. Arc. Ent.* i. 74. 2. pl. 20. f. 1.

Hab. Brazil (Santos).

4. LABIDUS LATREILLII.

Labidus Latreillii, *Jurine, Hym.* p. 282.
Shuck. Ann. & Mag. Nat. Hist. 1st ser. v. 199. 3 (1840).
Westw. Arc. Ent. i. 75. 4.
Latr. Gen. Crust. et Ins. iv. 123; *Nouv. Dict. d'Hist. Nat.* 2nd ed. xvii. 141.

Hab. Brazil; Demerara?; Cayenne.

5. LABIDUS SERVILLEI.

Labidus Servillei, *Westw. Arc. Ent.* i. 75. 5. pl. 20. f. 2.

Hab. Brazil (Para).

6. LABIDUS ATRICEPS.

Length 7 lines.—Body reddish, pubescent; head black; the face anteriorly, and the ridges between the antennæ at their base, the mandibles and antennæ, rufo-testaceous; the ocelli of glassy brightness, and placed in a triangle on the vertex. The anterior wings fulvo-hyaline, with the nervures brownish red; the thorax punctured above, not very closely so; on each side an impressed line runs from the scutellum nearly to the anterior margin of the mesothorax; the posterior tibiæ as wide as the femora, narrowed at the base, two-thirds of their length towards the apex of the same width, and narrowed from thence to the base; the basal joint of the tarsi broadest at the base. Abdomen curved; the peduncle of a subtriangular shape above, concave, with the margins raised, and smooth and shining. The insect covered with a fulvous pubescence.

Hab. Brazil (Ega, on the Amazons).

I have scarcely a doubt of this being the *Labidus Latreillii*, although in one particular it somewhat differs. In the original description of the 'Nouveau Dictionnaire d'Hist. Nat.,' the tibiæ

are described as increasing in thickness to their extremity, the spur at their apex broad at the base, as is also the basal joint of the tarsi. In the insect described, the tibiæ are of equal thickness two-thirds of their length; in other respects they perfectly agree.

7. LABIDUS MOROSUS.

Male. Length 9 lines.—Brown-black, covered with fine brown silky pubescence: the ocelli placed in a curve on the vertex, not smaller than in the other species, the space between the posterior pair smooth and shining and slightly concave; the antennæ, mandibles, and legs rufo-testaceous; the mandibles long and very slender. Thorax oblong-ovate, gibbous in front and at the scutellum; wings brown, the nervures brown-testaceous; the marginal cell acute at the base and apex, extending beyond the second submarginal cell one-third of its length; the second submarginal cell narrow, receiving the recurrent nervure one-third from its base; the legs slender, covered with long hair. Abdomen with the margin of the segments slightly constricted, and rufo-testaceous; the apex of the abdomen and the ventral segments with long fine hair; the peduncle transverse; concave above, the lateral posterior angles prominent and obtuse; the apical segment compressed vertically; the apical ventral plate furnished with two acute, stout, curved spines.

Hab. Mexico.

This species in some respects resembles *Labidus D'Orbignii*, described in Shuckard's 'Monograph;' but the size of the ocelli, form of the peduncle, and different neuration of the wings appear to characterize a distinct species.

8. LABIDUS AMPLIPENNIS.

Male. Length 7 lines.—Rufo-testaceous: the head fuscous; the ocelli large, glassy bright, placed on the hinder margin of the vertex in a slight curve; the face anteriorly, the labrum, and antennæ rufo-testaceous. Thorax very gibbous in front, as also at the scutellum; the metathorax perpendicularly truncate; wings ample, one-fourth longer than the entire insect; the nervures testaceous; the marginal cell lanceolate, acute at the apex, nearly as long as the first and second submarginals united; the first submarginal oblique-quadrate, its width half that of the lower margin of the second submarginal, the latter narrowed towards the marginal cell; the legs slender. Abdomen shining; the peduncle quadrate, slightly concave above, and of the same width as the abdomen; the apical segment fusco-ferruginous.

Hab. Bogota.

9. LABIDUS PILOSUS. B.M.

Length 9½ lines.—Rufo-testaceous: the head blackish, excepting the anterior margin of the face, the mandibles, and antennæ, which are of the same colour as the body. The thorax of a darker colour above than the abdomen, punctured and shining; the sides, the metathorax, and the legs with long pale pubescence; the wings hyaline, the nervures ferruginous; the mesothorax not gibbous in front. Abdomen covered with dense shining silky pile; the peduncle transverse, subtriangular, with the sides slightly rounded.

Hab. Brazil (St. Paul's). (Coll. H. W. Bates.)

10. LABIDUS MEXICANUS.

Length 6 lines.—Pale rufo-testaceous, covered with pale shining pubescence: eyes large, black, and prominent; the ocelli glassy bright; on each side of the anterior one an elevated carina, which passes between the antennæ to the anterior margin of the face, forming a deep smooth channel; the antennæ shorter than the thorax, stout, and tapering to a point at their apex. Thorax very gibbous in front and at the scutellum; the wings wanting. Abdomen: the margins of the segments slightly constricted; the peduncle transverse, the lateral margins not elevated, slightly convex in the middle.

Hab. Mexico (Orizaba).

SECT. 2.—*Peduncle of the abdomen more or less convex, transverse-quadrate.*

11. LABIDUS ILLIGERI.

Labidus Illigeri, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 397. *Append.* (1840).
Westw. Arc. Ent. i. 76. 8.

Hab. Brazil.

12. LABIDUS HARTIGII.

Labidus Hartigii, *Westw. Arc. Ent.* i. 75. 6. pl. 20. f. 3.

Hab. Brazil (Rio Janeiro and Sapé).

13. LABIDUS ESENBECKII.

Labidus Esenbeckii, *Westw. Arc. Ent.* i. 75. 7. pl. 20. f. 4.

Hab. Brazil (Rio Vendinha).

14. LABIDUS HALIDAII.

Labidus Latreillii, *Halid. Linn. Trans.* xvii. 328 (nec *Jurine*).
Labidus Halidaii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 200. 4 (1840).
Westw. Arc. Ent. i. 76. 9.
Hab. Brazil (St. Paul's). (Coll. W. W. Saunders, Esq.)

15. LABIDUS SWAINSONII.

Labidus Swainsonii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 201. 5 (1840).
Westw. Arc. Ent. i. 76. 11.
Hab. Brazil (Para); Mexico. (Coll. F. Smith.)

16. LABIDUS FONSCOLOMBII.

Labidus Fonscolombii, *Westw. Arc. Ent.* i. 76. 10.
Hab. Brazil.

17. LABIDUS HOPEI.

Labidus Hopei, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 258. 6 (1840).
Westw. Arc. Ent. i. 76. 12.
Hab. Brazil.

18. LABIDUS D'ORBIGNII.

Labidus D'Orbignii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 259. 7 (1840).
Hab. South America.

19. LABIDUS GRAVENHORSTII.

Labidus Gravenhorstii, *Westw. Arc. Ent.* i. 76. 13.
Hab. Brazil (Rio Vendinha).

20. LABIDUS SPINOLÆ.

Labidus Spinolæ, *Westw. Arc. Ent.* i. 77. 14.
Hab. Brazil (Meia Ponte, Caisara).

21. LABIDUS GUERINII.

Labidus Guerinii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 397. *Append.* (1840).
Westw. Arc. Ent. i. 77. 15.
Hab. South America.

22. LABIDUS WALKERI.

Labidus Walkeri, *Westw. Arc. Ent.* i. 77. 17.

Hab. Brazil (Meia Ponte).

23. LABIDUS KLUGII.

Labidus Klugii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 260. 8 (1840).
Westw. Arc. Ent. i. 77. 18.

Hab. St. Vincent's.

24. LABIDUS ROMANDII.

Labidus Romandii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 261. 9 (1840).

Hab. Brazil.

25. LABIDUS ERICHSONII.

Labidus Erichsonii, *Westw. Arc. Ent.* i. 77. 19.

Hab. Brazil.

26. LABIDUS PERTII.

Labidus Latreillii, *Perty, Del. An. Art.* p. 138. t. 27. f. 11 (nec *Jurine*).
Labidus Pertii, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 262. 11 (1840).
Westw. Arc. Ent. i. 78. 21.

Hab. Brazil.

Genus 4. ÆNICTUS *.

Enictus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 266 (1840).

1. ÆNICTUS AMBIGUUS.

Enictus ambiguus, *Shuck. Ann. & Mag. Nat. Hist.* 1st ser. v. 268 (1840).
Westw. Arc. Ent. i. 79. 1.

Hab. India (Poonah). (Coll. F. Smith.)

2. ÆNICTUS CERTUS. Plate I. fig. 4.

Enictus certus, *Westw. Arc. Ent.* i. 79. 2, and *Mus. Linn. Soc.*

Hab. ——? (Coll. Linn. Soc.)

* Males only of this genus are known.

3. ÆNICTUS INCONSPICUUS. Plate II. fig. 15*a*.

Ænictus inconspicuus, *Westw. Trans. Ent. Soc. Lond.* iv. 238. pl. 14. figs. 4, 4 *a–g*.

Hab. South Africa. (Coll. W. W. Saunders, Esq.)

4. ÆNICTUS PUBESCENS.

Length 3½ lines.—Rufo-testaceous, densely clothed with pale pubescence: the head black and shining; the mandibles and antennæ rufo-testaceous; the ocelli in a curve on the vertex, and situated on the sides of a central elevation; the mandibles long and curved. The thorax obscure ferruginous; wings hyaline and iridescent, the nervures and stigma dark brown. Abdomen densely clothed with long decumbent silky pubescence; the peduncle deeply concave above and channeled in the middle, slightly rounded at the sides, the peduncle of the same width as the second segment, the terminal segment obtuse.

Hab. Northern India. (Coll. F. Smith.)

This species closely resembles *Ænictus ambiguus*, from which it differs in being covered with dense long pale silky pubescence; the anterior margin of the prothorax is much more obtuse, and is notched in the middle; the peduncle is of a different form, for which refer to Plate II. fig. 17.

Family 6. THYNNIDÆ, *Erichs.*

Genus 1. THYNNUS.

Thynnus, *Fabr. Syst. Ent.* 360 (1775).
Myzine, pt., *Oliv. Encycl. Méth.* viii. (1811).
Tiphia, pt., *Fabr. Syst. Ent.* 354 (1775).
Myrmecodes, *Latr. Nouv. Dict. d'Hist. Nat.* xx. 2nd ed.
Mutilla, pt., *Lamarck, Hist. Nat.* iv. 2nd ed.
Thynnoides, *Guér. Voy. Coq. Zool.* ii. 232 (1830).
Agriomyia, *Guér. Voy. Coq. Zool.* ii. 218 (1830).
Lophocheilus, *Guér. Voy. Coq. Zool.* ii. (1842).
Enteles, *Westw. Arc. Ent.* ii. 143 (1843–45).
Catocheilus, *Guér. Mag. Zool.* (1842).
Erione, *Westw. Arc. Ent.* ii. 144 (1843–45).

In this Catalogue the *Thynnidæ* are divided generically on the differences of neuration in the anterior wings. After a careful examination of several extensive collections of *Thynnidæ*, that in particular of the British Museum, we find that the palpi differ in the number of joints in the males and females of the

same species; the wing-system alone, therefore, appears to form distinctive and satisfactory divisions of this remarkable family of Hymenoptera.

The immense variety of form observable in the apterous females of this genus renders it impossible to found any generic divisions upon such peculiarities. The relative proportions of the head, thorax, and abdomen vary greatly, the former being sometimes wider than the thorax, sometimes of the same width, and frequently narrower. The thorax is oblong-quadrate, narrowed anteriorly into a neck, or deeply strangulated in the middle, with various intermediate gradations. The abdomen, although usually wider than the head and thorax, is sometimes of the same width.

The very great dissimilarity existing between the winged males and the apterous females renders it a matter of impossibility to unite the sexes of a species with a certainty of correctness, without a positive observation of the living insects; but much has been done in this respect by Robert Bakewell, Esq., for some years resident in Australia, whose collection has been most liberally placed at my disposal for examination, and from which many new species have been presented to the Museum Collection.

Species of Australia.

1. THYNNUS DENTATUS.

Thynnus dentatus, *Fabr. Syst. Ent.* p. 360. 1 ♂; *Ent. Syst.* ii. 244. 1; *Syst. Piez.* p. 231. 1.
Latr. Gen. Cr. et Ins. iv. pl. 3. f. 1, & tom. i. t. 13. f. 2, 3, 4 ♂; *Encycl. Méth.* p. 382. f. 8.
Guér. Voy. Coq. Zool. ii. 222.
Klug, Berl. Abhandl. (1842) 15. 1.
Don. Ins. New Holl. pl. 41. f. 1.
Rœmer, Gen. Ins. t. 35. f. 8.
Lamarck, Anim. sans Vert. t. 4. f. 109.

Hab. Australia.

The Fabrician description of this species is not sufficiently minute in structural details to distinguish the insect amongst the multitude of species now brought together:—

"Statura et magnitudo *Vespæ vulgaris*. Antennæ porrectæ, fuscæ, basi piceæ. Labium flavum, dentatum. Maxillæ flavæ, apice nigræ. Thorax niger, striga antica, lobo postico scutelloque flavis. In medio dorsi lineolæ duæ impressæ, abbreviatæ. Abdomen glabrum, atrum, primo segmento basi, 2, 3, 4, punctis duobus flavis, reliquis immaculatis. Anus denticulis septem parvis serratus."—*Fabr. Syst. Ent.*

Male. Length 9½ lines.—Black: the mandibles, labrum, clypeus, orbits of the eyes interrupted at their summit, and a V-shaped mark at the base of the antennæ, yellow; the scape yellow in front; the flagellum ferruginous, slightly fuscous above; the tips of the mandibles black; the anterior margin of the clypeus rounded, and a short stout tooth at its lateral angles. The anterior and posterior margins of the prothorax yellow; the scutellum and metathorax yellow, the former fuscous at its base; the wings hyaline, with their extreme base brown; the legs ferruginous, the tarsi fuscous. Abdomen: the truncation of the base and half the superior surface of the first segment yellow; two large ovate spots on the second segment, two smaller ones on the third, and two minute oblique ones on the fourth segment, yellow; the sixth segment with a tooth at its lateral basal margins; the seventh deeply emarginate above, the lower ventral plate terminating in an acute spine, which has a short tooth on each side at its base, and another longer tooth on the lateral margins.

This species is apparently unique in the Banksian Collection.

2. THYNNUS VARIABILIS. Plate III. fig. 1 ♂. B.M.

Myzine aptera, *Oliv. Encycl. Méth.* viii. 137. 7 ♀.
Thynnus variabilis, *Kirby, Trans. Linn. Soc.* xii. 476 ♂ ♀.
Guér. Voy. Coq. Zool. ii. 223; *Mag. Zool.* (1842) pl. 101. fig. 1–20.
Klug, Berl. Abhandl. (1842) 16. 4. f. 1 ♂, 2 ♀.
Thynnus apterus, *Guér. Voy. Coq. Zool.* ii. 230 ♀.
Thynnus flavo-guttatus, *Guér. Voy. Coq. Zool.* ii. 230 ♀.
Myrmecodes flavo-guttatus, *Latr. Nouv. Dict. d'Hist. Nat.* 2nd ed. xxii. p. 143 ♀.
Thynnus Olivieri, *Erichs. Wiegm. Arch.* (1842) p. 262. 235 ♂ ♀.
Westw. Arc. Ent. ii. 146.
Hab. Australia; Tasmania.

3. THYNNUS ZONATUS.

Thynnus zonatus, *Guér. Voy. Coq. Zool.* ii. 222.
Klug, Berl. Abhandl. (1842) 15. 2.
Hab. Australia.

4. THYNNUS AFFINIS. B.M.

Thynnus affinis, *Guér. Voy. Coq. Zool.* ii. 226 ♂.
Klug, Berl. Abhandl. (1842) 18. 7.
Hab. Australia (King George's Sound).

5. THYNNUS CONFUSUS. B.M.

Male. Length 8¾ lines.—Closely allied to *T. variabilis*, but apparently a very distinct species. Black: the orbits of the eyes, interrupted at their summit, the mandibles, clypeus, and scape of the antennæ in front, yellow. Thorax: the anterior and posterior margins of the prothorax, the tegulæ, a spot beneath the wings, an escutcheon-shaped spot on the scutellum and post-scutellum, yellow; the wings fulvo-hyaline; the legs fulvous, with the coxæ spotted with black and pale yellow. Abdomen cylindrical, truncated at the base; the first segment with a large transverse macula on each side, the following segments with a double row of ovate spots on each side; beneath, the basal segment pinched in the middle into a sharp central yellow carina, the second segment almost entirely yellow; the following segments with a large transverse macula on each side, each macula with a crescent-shaped black mark behind; the apical ventral plate terminating in a narrow style, which has a sharp spine at the apex.

Hab. Australia.

This species has a resemblance both to *T. variabilis* and *T. affinis*; the form of the abdomen, however, is like that of *T. Shuckardi*, being cylindrical and regularly tapering to its apex; but the narrow terminal style at once separates it from both the allied species.

6. THYNNUS OBSCURIPENNIS.

Thynnus obscuripennis, *Guér. Voy. Coq. Zool.* ii. 227 ♂.
Klug, Berl. Abhandl. (1842) 18. 8.

Hab. Australia.

7. THYNNUS RUFIVENTRIS. B.M.

Thynnus rufiventris, *Guér. Voy. Coq. Zool.* 227 ♂.
Klug, Berl. Abhandl. (1842) 19. 9.

Female. Length 7–9 lines.—Yellow above, the mandibles ferruginous; the thorax at the sides and beneath dark fusco-ferruginous, sometimes black; the prothorax above, the posterior margin of the mesothorax, the margins of the scutellum and the metathorax behind, blackish; the legs ferruginous, with the coxæ black. The abdomen dark rufo-piceous beneath; the margins of the segments above, and a central line on the third, fourth, and fifth, black or rufo-piceous; the second segment with a

transverse, slightly curved, delicate striation; the apical segment with a longitudinal striation.

Hab. Australia (Port Jackson).

8. THYNNUS ANNULATUS.

Thynnus annulatus, *Kirby, Trans. Linn. Soc.* xii. 476. 29 ♂.
Guér. Voy. Coq. Zool. ii. 228.
Klug, Berl. Abhandl. (1842) 17. 5♂.
Thynnus australis, *Boisd. Voy. de l'Astr. Zool.* 655. pl. 12. f. 2.
Guér. Voy. Coq. Zool. ii. 228.

Hab. Australia (Port Jackson).

9. THYNNUS AUSTRALIS. B.M.

Myrmecodes Australis, *Gray, Cuv. Anim. Kingd.* (*Griff.*) (nec *Boisd.*) xv. 516. pl. 71. f. 3 ♀.
Thynnus Grayii, *Guér. Voy. Coq. Zool.* ii. 231.
Thynnus Australis, *Klug, Berl. Abhandl.* (1842) 18. 6.
Thynnus Brownii, *Westw. Arc. Ent.* ii. 113. pl. 76. f. 1 ♂.

Hab. Australia (King George's Sound).

10. THYNNUS WALLISII. B.M.

Male. Length 12–13 lines.—The head, antennæ, thorax, femora, and base of the abdomen black; the mandibles, clypeus, the anterior margins of the face and lower orbits of the eyes yellow; tips of the mandibles rufo-piceous; the posterior margin of the prothorax and the tegulæ yellow; the tibiæ and tarsi reddish yellow or pale ferruginous. The head and thorax densely covered with griseous pubescence, that on the disk of the latter yellowish; the legs have a short thick griseous pubescence; the wings flavo-hyaline, the nervures fusco-ferruginous. Abdomen reddish yellow, each segment with a faint ferruginous transverse line, which is straight in the middle, then curves abruptly downwards, the line being widened at the lower part of the curve; the curved line then runs upwards as high as the transverse line, and from thence curves off to the outer margins; above the outer curve there is an indistinct ferruginous dot; the apical segment is punctured at the base, and has curved striæ at the apex; the lower ventral plate is triangular, the lateral angles subdentate, the apical one with a blunt spine.

Female. Length 10 lines.—Head ferruginous, with a transverse yellow stripe on the front, between the eyes; the thorax and coxæ black; femora, tibiæ, and tarsi ferruginous, the two latter densely spinose. Abdomen yellow above, black at the base and beneath; each segment with a similar curved line as in the

male, but much darker; the line takes a semicircular curve in the centre, then a downward, and again an upward curve to the lateral margin; the second segment transversely striated, the apical one longitudinally so.

Hab. Australia (Sydney).

11. THYNNUS INSIGNIS. B.M.

Male. Length 15 lines.—Head and thorax black; abdomen reddish yellow; the legs ferruginous; the antennæ black, the scape ferruginous at the base and apex; the clypeus, labrum, mandibles, and orbits of the eyes yellow; the yellow line interrupted at the top of the eyes; the tip of the mandibles black. The thorax densely clothed with short silky white pubescence, that on the metathorax longest; the posterior margin of the prothorax and the tegulæ yellow; the wings slightly coloured. Abdomen truncate at the base, and gradually tapering from thence to the apex; the extreme base black; each segment with a round ferruginous spot on each side, united by an arched line of the same colour, which curves forwards to the basal margin of each segment; the apical margins of the segments semitransparent, and having a beautiful radiating series of dark hair-like lines springing from the basal margin of each segment; the apical segment with a semicircular space at its base striated longitudinally, beyond this the striation is transverse.

Hab. West Australia (Perth).

12. THYNNUS SIMILLIMUS. B.M.

Male. Length 15 lines.—This species is coloured like *T. Wallisii*, with the following differences: the tegulæ, prothorax, and legs entirely black, but pubescent as in *T. Wallisii*; the clypeus widely emargiate, the abdomen subtruncate at the base; the segments have a similar transverse upwards and downwards curved ferruginous line, but the segments are pale beneath the line; the apical segment has a semicircular margined space at its base, which is longitudinally striated; the segment has a curved striation beyond; the margin of the lower ventral plate is curved and entire.

Hab. Australia (Sydney).

13. THYNNUS VESTITUS. B.M.

Male. Length 7¼ lines.—Black: the head and thorax densely clothed with a white downy pubescence. The mandibles, clypeus, a line on the inner orbits of the eyes as high as the insertion of the antennæ, a narrow line behind them, and two oblique

spots between the antennæ, yellow. Thorax: wings hyaline, faintly yellow, with the nervures fusco-ferruginous; the tegulæ pale testaceous yellow; the anterior coxæ yellow in front. Abdomen: each segment has a broad interrupted yellow fascia, which is crossed longitudinally by a waved fuscous line at the lateral margins; beneath, the second and three following segments with a large yellow spot on each side; covered above and beneath with fine shallow punctures.

Hab. Australia (Swan River).

14. THYNNUS FLAVIVENTRIS.

Thynnus flaviventris, *Guér. Voy. Coq. Zool.* ii. 229 ♂; *Mag. Zool.* (1842) pl. 101. f. 21 ♂.
Klug, Berl. Abhandl. 19. 10.

Hab. Australia.

15. THYNNUS EMARGINATUS.

Thynnus emarginatus, *Fabr. Syst. Ent.* 360. 2 ♀; *Ent. Syst.* ii. 244. 2; *Syst. Piez.* 231. 2.
Guér. Voy. Coq. Zool. ii. 229.

Hab. Australia.

16. THYNNUS PEDESTRIS.

Tiphia pedestris, *Fabr. Syst. Ent.* 354. 8 ♀; *Ent. Syst.* ii. 228. 19; *Syst. Piez.* 235. 23.
Thynnus pedestris, *Guér. Voy. Coq. Zool.* ii. 16. 3.
Klug, Berl. Abhandl. (1842) 16. 3.
Mutilla Myrmecodes, *Lamarck, Hist. Nat.* 2nd ed. iv. 316. 7.

Hab. Australia.

17. THYNNUS HYALINATUS. B.M.

Thynnus hyalinatus, *Westw. Arc. Ent.* ii. 106. pl. 74. fig. 3 ♂, fig. 4 ♀.

Hab. Tasmania.

18. THYNNUS MACULOSUS. B.M.

Male. Length 11 lines.—Black: the clypeus, the margins of the face on each side, the lower part of the orbits of the eyes, and two spots between the antennæ, yellow; an ovate black spot in the middle of the clypeus; the head and thorax above with pale fulvous pubescence, on the sides and beneath it is cinereous. The metathorax with a transverse yellow spot at its base; the wings fulvo-hyaline, the nervures dark ferruginous; the legs ferruginous, with the coxæ black, the posterior pair with a

minute yellow spot at the sides. Abdomen: a subovate yellow spot on each side of the first five segments placed in the middle, a larger spot on each segment at the extreme lateral margins; beneath, a transverse spot on the basal segment, a large yellow macula on each side of the four following segments, and a minute one on the fifth.

Hab. Australia.

This species is closely allied to *T. variabilis* and *hyalinatus*.

19. THYNNUS PICIPES.

Thynnus picipes, *Westw. Arc. Ent.* ii. 114. pl. 77. f. 2 ♂.
Thynnus flavilabris, *Guér. Mag. de Zool.* (1842) p. 8?

Hab. Australia (King George's Sound).

20. THYNNUS LEACHIELLUS. B.M.

Thynnus interruptus, *Westw. Arc. Ent.* ii. 115 (nec *Klug*), pl. 77. f. 1 ♂.
Thynnus Leachiellus, *Westw. Arc. Ent.* ii. 135. pl. 83. f. 4 ♀.

Hab. Australia.

21. THYNNUS TUBERCULIVENTRIS. B.M.

Thynnus tuberculiventris, *Westw. Arc. Ent.* 118. pl. 76. f. 2 ♂.

Hab. Australia (King George's Sound).

22. THYNNUS DIMIDIATUS.

Thynnus dimidiatus, *Westw. Arc. Ent.* ii. 121. pl. 76. f. 5 ♂.

Hab. Australia.

23. THYNNUS SHUCKARDI. B.M.

Thynnus Shuckardi, *Guér. Mag. Zool.* (1842) pl. 100. f. 13 ♂.
Westw. Arc. Ent. ii. 136. pl. 83. f. 5 ♀.

Hab. Australia.

24. THYNNUS GUERINII. B.M.

Thynnus Guerinii, *Westw. Arc. Ent.* ii. 137.

Hab. Australia.

25. THYNNUS KLUGII. B.M.

Thynnus Klugii, *Westw. Arc. Ent.* ii. 140. pl. 82. f. 1 ♂.

Hab. Australia (Swan River).

26. THYNNUS FLAVILABRIS. B.M.

Thynnus flavilabris, *Guér. Mag. Zool.* (1842) *Mon. Thynn.* p. 8.
Thynnus morio, *MacLeay, MS.*?

Hab. Australia.

27. THYNNUS FENESTRATUS. B.M.

Male. Length 12 lines.—Black: the abdomen shining, with a nigro-æneous tinge; the palpi, labrum, clypeus and mandibles orange-red, the tips of the latter black; the orange colour runs from the clypeus on each side along the anterior margin of the face to the base of the mandibles; the head and thorax with a dense griseous pubescence, which is obliterated on the disk of the latter, but thick and woolly on the metathorax; wings dark brown with a violet reflexion, their base hyaline. The abdomen with scattered punctures, and an impressed transverse line near the basal margin of the first, second, and third segments; the apical segment longitudinally rugose, the inferior ventral plate terminating in a barbed spine.

Hab. Australia (Swan River).

28. THYNNUS GRAVIDUS.

Thynnus gravidus, *Westw. Arc. Ent.* ii. 141.
Thynnus Klugii, *Westw.* ♀?

Hab. Australia.

29. THYNNUS PURPUREIPENNIS.

Thynnus purpureipennis, *Westw. Arc. Ent.* ii. 143. pl. 83. f. 1 ♂.

Hab. Australia.

30. THYNNUS DECIPIENS.

Thynnus decipiens, *Westw. Arc. Ent.* ii. 105 (note). 124 ♂.

Hab. Tasmania.

31. THYNNUS OLIVIERI.

Thynnus Olivieri, *Erichs. Wiegm. Arch.* (1842) p. 263. 235 ♂.
Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

32. THYNNUS FERVIDUS.

Thynnus fervidus, *Erichs. Wiegm. Arch.* (1842) 262. 236 ♂.
Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

33. THYNNUS HUMILIS.

Thynnus humilis, *Erichs. Wiegm. Arch.* (1842) 264. 238 ♀.
Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

34. THYNNUS MODESTUS. B.M.

Male. Length 8 lines.—Shining black: closely and rather finely punctured; the mandibles, clypeus, orbits of the eyes interrupted at their summit, and a V-shaped mark between the antennæ, yellow. Thorax: the anterior and posterior margin of the prothorax reddish-yellow; the tibiæ, tarsi, and knees pale ferruginous; wings fulvo-hyaline, the nervures fusco-ferruginous. Abdomen: each segment with a large ovate honey-coloured macula on each side; beneath, the second and three following segments with a smaller subangular spot on each side.

Hab. Australia (Swan River).

35. THYNNUS CONSTRICTUS. B.M.

Male. Length 9½ lines.—Black and shining: the mandibles, clypeus, orbits of the eyes interrupted at their vertex, and a V-shaped mark between the antennæ, yellow. Thorax: a broad fascia on the posterior margin of the prothorax, the tegulæ, a square spot on the mesothorax touching the scutellum, the latter with a spot behind, the post-scutellum, and two oblique lines on the metathorax, yellow; wings fulvo-hyaline, the nervures fusco-ferruginous; the femora ferruginous, the tibiæ and tarsi yellow; the femora fuscous in front. Abdomen: the margins of the segments constricted; an oblong yellow macula at the lateral margins of each segment, each macula notched in front; at the apical margin of each segment are a number of large punctures; beneath coarsely punctured, and with a minute yellow spot on each side of the second, third, and fourth segments.

Hab. Western Australia (Swan River).

36. THYNNUS SENEX. B.M.

Male. Length 9 lines.—Black: the head, thorax, and legs thickly covered with cinereous pubescence, slightly fulvous on the vertex and disk of the thorax; the mandibles, clypeus, and lower orbits of the eyes yellow; the clypeus with a transverse line above and two oblique lines beneath, ferruginous. Thorax: the hinder margin of the prothorax obscurely ferruginous; the wings hyaline, the nervures and tegulæ ferruginous; the legs ferruginous, with the coxæ and trochanters black. Abdomen:

each segment with a large ovate spot on each side, beneath spotted as above; the apical ventral plate angular at the apex, which terminates in a curved spine.

Hab. Western Australia.

37. THYNNUS ASSIMILIS. B.M.

Male. Length 8–9 lines.—Closely allied to *T. melleus*; but the clypeus is not so much produced, and the process at the apex of the terminal ventral plate is truncate; in *T. melleus* it has an acute spine at the apex; the apical segment above is punctured in the latter insect, in the present it is longitudinally striated. The clypeus, mandibles, orbits of the eyes, hinder margin of the vertex, and two spots at the insertion of the antennæ, yellow; the yellow line round the orbits of the eyes interrupted at their summit. Thorax black; a line at the anterior and posterior margins of the prothorax, two longitudinal lines on the disk of the mesothorax, one over each tegula, two spots on the scutellum and one at each of its basal angles, the post-scutellum and an oblique spot on each side, two oblique lines on the metathorax and a small square one at its apex in the centre, yellow; the tegulæ and some irregularly-placed spots beneath the wings yellow; wings hyaline, the nervures ferruginous. Abdomen yellow, with a line down the centre, which is black at the base, becoming ferruginous towards the apex, and similar transverse lines at the basal and apical margins of all the segments; the legs ferruginous.

Var. 1. The abdomen ferruginous, with black lines as above.

Hab. Australia (Swan River).

38. THYNNUS AGILIS. B.M.

Male. Length 11 lines.—Head and thorax black, abdomen reddish-yellow; the clypeus, a line at the inner and outer margins of the eyes interrupted at their summit, and two oblique spots between the antennæ and the mandibles, yellow. Thorax: the posterior margin of the prothorax, a spot on the scutellum, the post-scutellum, the tegulæ, and legs, yellow; the legs with a ferruginous tinge on the femora and tibiæ beneath; wings hyaline, with a faint yellow tinge, the nervures fusco-ferruginous; the metathorax swollen at the sides, rounded behind, and covered with hoary pubescence, the other parts of the thorax as well as the head with a short thin hoary pubescence. The base of the abdomen and the basal and apical margins of all the segments blackish-brown; each segment has on each side a large ovate macula nearly the width of the segment, and nearly meet-

ing in the centre; the apical segment with oblong punctures; the ventral plate terminating in an acute spine.

Hab. Australia (Swan River).

39. THYNNUS FLAVIPENNIS. B.M.

Male. Length 9 lines.—Black: a line along the outer orbits of the eyes which is continued along the margin of the vertex, the mandibles, clypeus, a broad line up the inner orbits of the eyes as high as the antennæ, and the scape in front, reddish-yellow. Thorax: the prothorax, a transverse spot on the mesothorax behind, a line over the tegulæ terminating in a spot, the scutellum, post-scutellum, and a reversed barb-shaped spot on the metathorax, yellow; there is also a yellow line at the sides of the latter, and the tegulæ are yellow; the wings flavo-hyaline, the nervures ferruginous; the legs pale ferruginous, with the anterior coxæ yellow in front. Abdomen reddish-yellow, each segment with a very large yellow spot on each side, the hinder margin of each defined by a ferruginous stripe; the apical segment with a curved striation; the ventral plate triangular, with the apical angle obtuse.

Hab. Australia.

Resembles *T. melleus*: some examples of this species have a large black or fuscous spot at the sides of the prothorax.

40. THYNNUS FLAVOPICTUS. B.M.

Male. Length 11 lines.—Black: the mandibles, clypeus, orbits of the eyes interrupted at their summit, the head behind, and two oblique lines between the antennæ, yellow. Thorax: the anterior and posterior margins of the prothorax, two oblique stripes on the disk of the mesothorax uniting at the base of the scutellum, the tegulæ and a line over them, a transverse spot on the scutellum, two ovate spots on each side, the post-scutellum uniting with a spot on each side, and the metathorax, yellow; the latter has a black angular spot in the middle of the base and a larger one at the lateral basal angles; the legs ferruginous, with the coxæ and femora yellow beneath; wings hyaline, their nervures fusco-ferruginous. Abdomen: each segment with a broad interrupted yellow fascia in the middle; the apical segment yellow, except at its base, and longitudinally striated; the ventral plate terminating in a sharp curved spine, which has a smaller one on each side at its base; beneath, the basal segment with a trilobate spot, the four following segments with a very

broad yellow fascia which is deeply emarginate in the centre, the sixth with a spot on each side.

Hab. Australia.

41. THYNNUS (THYNNOIDES) GRACILIS. B.M.

Thynnus (Thynnoides) gracilis, *Westw. Arc. Ent.* ii. 139. pl. 83. f. 2 ♂, 3 ♀.

Hab. Australia (Adelaide; River Murray).

42. THYNNUS (THYNNOIDES) NIGRIPES. B.M.

Thynnoides nigripes, *Guér. Mag. Zool.* (1842) p. 10.

Hab. Australia (Swan River).

43. THYNNUS (THYNNOIDES) FULVIPES. B.M.

Thynnoides fulvipes, *Guér. Voy. Coq. Zool.* ii. 233.
Thynnus fulvipes, *Klug, Berl. Abhandl.* (1842) 22. 15 ♂.

Hab. Australia (Port Jackson).

44. THYNNUS (THYNNOIDES) RUBRIPES. B.M.

Thynnoides rubripes, *Guér. Voy. Coq. Zool.* ii. 233 ♂; *Atlas, Ins.* pl. 8. f. 9.
Thynnus rubripes, *Klug, Berl. Abhandl.* (1842) 22. 16.

Hab. Australia (Port Jackson).

45. THYNNUS (THYNNOIDES) LABIATUS.

Thynnus labiatus, *Klug, Berl. Abhandl.* (1842) 23. 17 ♂.

Hab. Australia.

46. THYNNUS (THYNNOIDES) PUGIONATUS.

Thynnoides pugionatus, *Guér. Voy. Coq. Zool.* ii. 234 ♂.
Thynnus pugionatus, *Klug, Berl. Abhandl.* (1842) 23. 19.

Hab. Australia.

47. THYNNUS (THYNNOIDES) FUMIPENNIS. B.M.

Thynnus (Thynnoides) fumipennis, *Westw. Arc. Ent.* ii. 108. pl. 75. f. 1 ♂, f. 2 ♀.

Hab. Australia (Port Philip).

48. THYNNUS (THYNNOIDES) OBSCURUS. B.M.

Thynnus obscurus, *Klug, Berl. Abhandl.* (1842) 22. 14. f. 4 ♂.
Thynnus (Thynnoides) obscurus, *Westw. Arc. Ent.* ii. 139. pl. 82. f. 2 ♀.

Hab. Australia.

49. THYNNUS TROCHANTERINUS. B.M.

Thynnus trochanterinus, *Westw. Arc. Ent.* ii. 116. pl. 77. f. 3 ♂.

Hab. Australia (King George's Sound).

50. THYNNUS (THYNNOIDES) BASALIS.

Male. Length 7½ lines.—Head, thorax, legs, and basal segment of the abdomen black, the rest of the segments of the latter red; the mandibles, clypeus, and orbits of the eyes yellow, the orbits black at their summit. The head and thorax covered with pale pubescence, and the legs with short pale downy pile; the anterior tibiæ in front and the apical joints of the tarsi ferruginous; the wings slightly coloured, with the nervures dark brown. Abdomen rather strongly punctured, the margins of the segments slightly constricted, and each with a transverse impressed line at its base; beneath regularly punctured, the margins of the segments fringed with pale hairs.

Hab. Australia (Swan River).

51. THYNNUS (THYNNOIDES) CARBONARIUS. B.M.

Male. Length 8 lines.—Black: head and thorax very closely punctured and subopake; abdomen as long as the head and thorax, punctured, closely so at the base of the segments, and much more distantly so towards their apical margins; the apical segment with a central produced subtriangular process at its base, longitudinally striated, beneath which it is transversely striated; beneath finely and very closely punctured; the sixth segment with a small tooth on each side of its apical margin; the seventh segment terminating in a lanceolate spine, which has a small tooth on each side of its base; the spine is transversely striated above at its base and flattened.

Hab. Australia (Adelaide).

52. THYNNUS (AGRIOMYIA) DEPRESSUS. B.M.

Thynnus (Agriomyia) depressus, *Westw. Arc. Ent.* ii. 107. pl. 74. f. 5 ♂, f. 6 ♀.

Hab. Australia (King George's Sound).

53. THYNNUS (AGRIOMYIA) ODYNEROIDES. B.M.

Thynnus (Agriomyia) odyneroides, *Westw. Arc. Ent.* ii. 109. pl. 75. f. 3 ♂, f. 4 ♀.

Hab. Australia.

54. THYNNUS (AGRIOMYIA) MELLEUS. B.M.

Thynnus (Agriomyia?) melleus, *Westw. Arc. Ent.* ii. 118. pl. 76. f. 4 ♂.

Hab. Australia (King George's Sound; Melbourne).

55. THYNNUS (AGRIOMYIA) TRIFIDUS. B.M.

Thynnus (Agriomyia) trifidus, *Westw. Arc. Ent.* ii. 119. pl. 77. f. 4 ♂.

Hab. Australia (King George's Sound).

56. THYNNUS (AGRIOMYIA) MARGINALIS. B.M.

Thynnus (Agriomyia) marginalis, *Westw. Arc. Ent.* ii. 120. pl. 76. f. 3 ♂.

Hab. Australia (King George's Sound).

57. THYNNUS (AGRIOMYIA) MARGINILABRIS.

Agriomyia marginilabris, *Guér. Mag. Zool.* (1842) *Mon. Thynn.* p. 3. pl. 100 ♂.

Hab. Australia.

58. THYNNUS (AGRIOMYIA) CONSANGUINEUS.

Agriomyia affinis, *Guér. Mag. Zool.* (1842) *Mon. Thynn.* p. 4.

Hab. Australia.

59. THYNNUS (AGRIOMYIA) WESTWOODII.

Agriomyia Westwoodii, *Guér. Mag. Zool.* (1842) *Mon. Thynn.* p. 4.

Hab. Tasmania.

60. THYNNUS (AGRIOMYIA) MACULATUS. B.M.

Agriomyia maculata, *Guér. Voy. Coq. Zool.* ii. 218.
Thynnus maculatus, *Klug, Berl. Abhandl.* (1842) 20. 12.

Hab. Australia.

61. THYNNUS (AGRIOMYIA) VARIEGATUS.

Thynnus variegatus, *Klug, Berl. Abhandl.* (1842) 20. 12.

Hab. Australia.

62. THYNNUS (AGRIOMYIA) PULCHELLUS. B.M.

Thynnus pulchellus, *Klug, Berl. Abhandl.* (1842) 20. 13 ♂.

Hab. Australia.

63. THYNNUS (AGRIOMYIA) SENILIS. B.M.

Thynnus senilis, *Erichs. Wiegm. Archiv* (1842) 263. 236 ♂.
Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

64. THYNNUS (AGRIOMYIA) JUCUNDUS. B.M.

Male. Length 5 lines.—Black: the mandibles, clypeus, orbits of the eyes interrupted at their summit, a narrow line on the vertex, a spot between the stemmata, and an angular shape above the antennæ, bright yellow; the line on the inner orbits emarginate. The margins of the prothorax, an elongate-quadrate-shaped spot on the mesothorax having the anterior angles produced, the tegulæ and a line over them uniting with a spot behind, a spot on the scutellum, the post-scutellum, an elongate angular shape on the metathorax, its sides, and two spots beneath the wings, yellow; the legs red, and spotted with yellow; the wings hyaline and iridescent, with the nervures ferruginous. Abdomen: an interrupted broad yellow fascia on each segment, which is slightly notched anteriorly towards the lateral margins; beneath, the segments with broad interrupted fasciæ.

Hab. Australia.

65. THYNNUS (AGRIOMYIA) RUBELLUS. B.M.

Male. Length 6½ lines.—Black: the mandibles, anterior margins of the face, the clypeus, and the lower portion of the orbits of the eyes reddish-yellow. Thorax: a narrow line on the anterior margin of the prothorax, the tegulæ, and the post-scutellum yellow; the thorax beneath and the metathorax with cinereous pubescence; wings subhyaline, the nervures ferruginous; the legs ferruginous, with the coxæ black. Abdomen: the second, third, and fourth segments red, with a transverse whitish fascia near their apical margins; these fasciæ have a central minute black dot, and on each side a short black line; the fifth segment has at its apical margin a curved pale line on each side, terminating in a round dot within; beneath, the segments have a central and a lateral pale spot; the basal segment with a conical tubercle, which is pale at the tip.

Hab. Australia.

66. THYNNUS (AGRIOMYIA) INCONSTANS. B.M.

Male. Length 8½ lines.—Black: head and thorax covered with cinereous downy pubescence, that on the vertex and disk of the thorax slightly fulvous; the clypeus and mandibles yellow, usually with ferruginous stains. Thorax: a minute yellow dot on the scutellum and post-scutellum; the legs ferruginous; the coxæ, trochanters, and femora above, fuscous or black; wings hyaline, the nervures black, becoming ferruginous at the base of the wings. Abdomen ferruginous, the basal and apical margins of the segments black or fuscous; a black, fuscous, or ferruginous line down the centre, forming, as it were, large ovate ferruginous spots on the segments on each side; some examples have the abdomen ferruginous, with large undefined spots on each side; sometimes the spots are yellowish, or the abdomen is dark fusco-ferruginous and the spots yellowish.

Hab. Australia.

67. THYNNUS (AGRIOMYIA) ALBO-PICTUS. B.M.

Male. Length 7 lines.—Black: the clypeus, mandibles, orbits of the eyes broadly, and a line tracing a bell-shaped form before the anterior stemma, white; the orbits of the eyes interrupted at their summit. The margins of the prothorax, a square spot on the mesothorax, the tegulæ, a broad stripe on the scutellum and a spot before its basal angles, the post-scutellum uniting with a spot beyond it, and the metathorax, except its extreme base, white; two large irregular-shaped spots beneath the wings; the coxæ and femora beneath white; the coxæ spotted with black; the anterior and intermediate tibiæ and tarsi ferruginous; wings hyaline, with blackish nervures. Abdomen: each segment with a very broad white fascia, the basal one narrowly interrupted, the following with a narrow central black line near their posterior margin and a minute notch anteriorly towards the lateral margins; beneath, white, with narrow black margins to the segments, the basal one produced into a conical tooth.

Hab. Australia (Swan River).

68. THYNNUS (AGRIOMYIA) LUCTUOSUS. B.M.

Male. Length 7–8 lines.—Jet-black: the abdomen shining; the head and thorax covered with confluent punctures and subopake; the sides and beneath with thin long cinereous pubescence; the anterior margin of the face and clypeus, a minute spot in the middle of the latter, a spot at the base of the mandibles, and a short narrow line on the lower part of the outer

orbits of the eyes, white; a minute white spot in the middle of the posterior margin of the vertex. Thorax: a narrow line on the anterior margin of the prothorax, a spot on the tegulæ, a triangular minute one on the mesothorax touching the scutellum, and the post-scutellum, white; wings subhyaline, faintly clouded towards their apex. Abdomen: an irregular-shaped white line in the middle of the second and two following segments, interrupted in the middle; the lines on the second segment emarginate beneath, those on the two following segments interrupted; the fifth segment with two minute dots; beneath, the basal segment produced into a white conical tooth in the middle of its apical margin, the three following segments with a transverse emarginate stripe in the middle and a minute dot at the extreme lateral margins; the fifth segment with two minute dots, or immaculate.

Hab. South Australia.

The white markings on the abdomen vary in different individuals in being more or less obliterated; and examples are not uncommon with the legs red, as observed by Mr. Bakewell, who captured several pairs of the sexes.

69. THYNNUS (AGRIOMYIA) ALBO-MACULATUS, B.M.

Male. Length $7\frac{1}{2}$ lines.—Black: head and thorax closely and strongly punctured and subopake; abdomen shining black. The clypeus and a line on each side, terminating at the margin of the eyes, and a spot at the base of the mandibles, yellow; the prothorax yellow, with a central and a lateral black dot; a square spot on the mesothorax, a spot on the scutellum and two on each side of it, the post-scutellum, an irregular stripe beneath the wings, the tegulæ, and two oblique spots on the metathorax, yellowish-white. Abdomen shining: the first segment with a minute white spot on each side; the second, third, and fourth segments with an oblong transverse subquadrate spot on each side; the fifth segment with a narrow line on each side; each segment has a transverse impressed line a little before its apical margin; beneath, the second and two following segments with transverse white spots on each side and an impressed line before their apical margins; the basal segment produced into a conical tooth in the middle of its posterior margin.

Hab. Australia (Adelaide).

Probably in some examples the markings on the thorax would be white; in the specimen described they appear discoloured.

70. THYNNUS (AGRIOMYIA) VIGILANS. B.M.

Male. Length 8 lines.—Black, and thinly covered with cinereous pubescence, which is most dense on the body beneath and on the metathorax; the mandibles, margins of the face on each side of the clypeus, a narrow line on the lower portion of the orbits of the eyes, and a narrow stripe on each side of the hinder margin of the vertex, yellow. Thorax: a minute yellow spot on the scutellum and post-scutellum; wings hyaline, the nervures fusco-ferruginous. Abdomen finely punctured; the margins of the segments slightly constricted; a subovate yellow spot on each side of the four basal segments.

Hab. Australia.

71. THYNNUS COGNATUS. B.M.

Male. Length 6 lines.—Black: the head, thorax, and abdomen beneath covered with long griseous pubescence; the abdomen has a thin short cinereous pubescence above. Head and thorax covered with confluent punctures; the anterior margins of the face and clypeus and the mandibles yellow; the tarsi and articulations of the legs ferruginous, the tarsi slightly fuscous above; wings fulvo-hyaline, the nervures fusco-ferruginous. Abdomen subpetiolate, smooth, and shining; the four basal segments with an ovate orange spot on each side.

Hab. Australia.

This species is similarly coloured to *T. vigilans*, but differs in having the anterior margin of the clypeus yellow, the tarsi of a different colour, and in having the abdomen subpetiolate, shining, and not punctured.

72. THYNNUS XANTHORRHŒI (*MS. MacLeay*). B.M.

Male. Length 6 lines.—Black: the mandibles, labrum, inner and outer orbits of the eyes interrupted at their summit, a minute spot on the hinder margin of the vertex, and an elongate one between the antennæ which is divided by a narrow black line, yellow. Thorax: the margins of the prothorax, three large irregular-shaped spots beneath the wings, two pointed stripes on the mesothorax, an angular spot on the scutellum and a spot on each side, the post-scutellum with a spot on each side, and the metathorax, yellow; a central longitudinal black line and a large black spot on each side of the metathorax; the legs ferruginous, with the coxæ yellow; the trochanters black, and the apical joints of the tarsi fuscous; wings hyaline, the nervures fusco-ferruginous. Abdomen: all the segments, excepting the apical one, with a transverse yellow fascia in the middle more

or less interrupted, the fascia beneath produced laterally into a hook-shaped form and slightly notched above; beneath, the apical half of the basal segment yellow, with an oblique black line on each side; the second segment yellow, with a black stripe on each side, and two or three of the following segments with a yellow spot on each side.

Hab. Australia (Sydney, Moreton Bay, &c.).

73. THYNNUS CARINATUS. B.M.

Male. Length 5½–6 lines.—Black: the clypeus, anterior margins of the face, inner margins of the eyes broadly, not extending to their summit, a line behind the eyes, two spots on the hinder margin of the vertex, and a V-shaped mark between the antennæ, yellow; the clypeus with a central longitudinal black carina, not extending to the apex. The margins of the prothorax, an oblique stripe and two spots beneath the wings, the tegulæ, a minute spot on the mesothorax, with a similar one on the scutellum and another on each side of its base, the post-scutellum, and an oblique stripe on each side of the metathorax, yellowish-white; wings hyaline, the nervures ferruginous; legs ferruginous, with the intermediate and posterior tibiæ and tarsi fuscous above; the coxæ black, spotted with yellow. Abdomen shining; each segment, the two apical ones excepted, with a curved white or yellowish-white line on each side, which terminates at each end in a rounded spot; beneath, the second, third, and fourth segments with a similar curved line on each side, but not having terminal spots.

Hab. Australia (N.W. Coast).

74. THYNNUS OPTIMUS. B.M.

Male. Length 5¼ lines.—Head, thorax, and abdomen black above and ferruginous beneath; the mandibles, clypeus, orbits of the eyes, and a bell-shaped spot above the antennæ, yellow. Thorax: the margins of the prothorax (the anterior one interrupted), an oblong spot on the disk of the mesothorax, the tegulæ and a line over each, a spot on the scutellum, the post-scutellum, a longitudinal line on the metathorax, its sides, a spot on the coxæ, a transverse one on the breast, and several large ones beneath the wings, yellow; wings hyaline, the nervures ferruginous. Abdomen: a large yellow spot on each side of the segments, a line between the spots ferruginous; beneath, a yellow spot on each side of the second, third, and fourth segments.

Hab. Australia (Swan River).

75. THYNNUS INTRICATUS. B.M.

Male. Length 4½ lines.—Black: the head finely rugose; a narrow line at the lower orbits of the eyes, the clypeus and anterior margins of the face, two spots between the antennæ, and a spot at the base of the mandibles, white; an oblique reddish-yellow spot on each side of the vertex touching the eyes; an anchor-shaped black spot on the clypeus. Thorax finely punctured; the metathorax finely rugose, except its extreme base, which is smooth and shining; a line on the anterior and posterior margins of the prothorax, the former slightly interrupted, a spot on the tegulæ, a longitudinal stripe on the mesothorax, a spot on the scutellum, a spot on the posterior lateral margin of the metathorax, and three spots on each side of the thorax beneath the wings, white; the wings hyaline, their nervures black. Abdomen smooth and shining; the basal segment with a minute white spot on each side, the four following segments with a large oblique spot at their lateral margins and two small ones in the centre, these spots united to each other on each side by a narrow curved line; beneath, the second, third, and fourth segments with an ovate white spot at their extreme lateral margins; the terminal segment produced into an obtuse appendage which has a minute tooth in the middle of its apical margin.

Hab. Tasmania.

76. THYNNUS NIGER. B.M.

Male. Length 7–8 lines.—Black: the head and thorax very closely punctured, and with silvery pubescence on the cheeks, coxæ, femora, pectus, and metathorax; the clypeus and mandibles yellow; the tips of the mandibles, margins of the clypeus, and two oblique spots on the latter, black; the wings hyaline with a yellowish tinge, the nervures and outer margins of the tegulæ obscurely ferruginous; the spines and claws of the tarsi ferruginous. Abdomen shining and finely punctured; a deeply impressed longitudinal channel in the middle of the basal segment; the margins of the segments constricted; the apical segment terminating in an acute spine which has a minute lateral spine at its base.

Hab. Tasmania.

77. THYNNUS (AGRIOMYIA) NITIDUS. B.M.

Male. Length 4½ lines.—Black, shining, and punctured; the head and thorax with a thin cinereous pubescence; tips of the mandibles ferruginous; the wings subhyaline, and slightly fuscous towards their apex, the nervures black; the tarsi obscurely ferruginous, with the spines ferruginous. Abdomen covered with fine shallow punctures, the margins slightly punc-

tured; beneath, smooth and shining; the apex terminating in a lanceolate appendage.

Hab. Australia.

78. THYNNUS (AGRIOMYIA) UMBRIPENNIS. B.M.

Male. Length 5 lines.—Black and closely punctured; the head and thorax subopake; the abdomen shining; wings dark brown, with a violet iridescence. Abdomen: the segments with their margins deeply constricted; beneath roughly punctured, the punctures confluent; the sixth ventral segment with a stout angular tooth on each side; the apical segment with deep coarse punctures, and terminating in a tridentate process.

Hab. Australia.

79. THYNNUS (AGRIOMYIA) FERVENS. B.M.

Male. Length 5½ lines.—Black: head and thorax very closely punctured and subopake; the abdomen with distant very shallow punctures, and shining black; the mandibles, tibiæ, tarsi, and knees ferruginous; the apical joints of the tarsi dusky; wings fulvo-hyaline, the nervures ferruginous; the head and thorax with a thin pubescence, which is pale fulvous on the disk and cinereous on the sides and beneath. Abdomen: the margins of the segments constricted; the apical ventral segment terminating in an angulated appendage which has a minute tooth at its apex.

Hab. Australia.

80. THYNNUS (AGRIOMYIA) TENUATUS. B.M.

Male. Length 7 lines.—Black, subopake, very closely punctured, and thinly covered with hoary pubescence; the mandibles shining black; the tarsi obscurely ferruginous beneath, the spines of the tarsi and the calcaria ferruginous; the wings hyaline, the nervures black; the abdomen longer than the head and thorax; the basal margin of the segments of the abdomen depressed; the apical segment with a triangular shape in the middle of its base, beneath which it is concavely truncate, and then is oblique to the apical margin, the triangular shape and the oblique portion longitudinally grooved; the basal segment not spined beneath or toothed, the segments slightly concave, the apical one obtuse.

Hab. Australia (Swan River).

This species has very much the aspect of a *Rhagigaster*, but, as the description shows, it is a true *Thynnus*.

81. THYNNUS (AGRIOMYIA) SEXMACULATUS. B.M.

Male. Length 5½ lines.—Black: head and thorax closely punctured and subopake; abdomen very smooth and shining; legs ferruginous, with the coxæ and trochanters black, and the tarsi fuscous or fusco-ferruginous; the head, thorax, and legs thinly covered with hoary pubescence. The anterior margin of the clypeus and face, the mandibles, a narrow interrupted line on the anterior margin of the prothorax, and an ovate macula on each side of the second, third, and fourth segments of the abdomen, white; beneath, smooth, shining, and impunctate; the terminal segment of a broad lanceolate form, with a minute tooth at its apex.

Hab. Australia (Sydney).

82. THYNNUS (AGRIOMYIA) BIDENTATUS. B.M.

Male. Length 4½ lines.—Black and shining: head closely punctured and thinly covered with cinereous pubescence; the clypeus, an ovate spot above each antenna, the mandibles, and an abbreviated line behind the eyes, yellow; a black line extending halfway down the clypeus; the anterior margin of the clypeus and the tips of the mandibles ferruginous. Thorax: a broad stripe on the anterior and posterior margins of the prothorax, a spot on the tegulæ, a quadrate spot on the mesothorax, an ovate one on the scutellum, the post-scutellum, an oblong spot at the sides of the metathorax, a large spot beneath the wings with a smaller one behind it, yellow; the tibiæ and tarsi ferruginous; a yellow spot at the apex of the anterior and intermediate femora outside; the intermediate and posterior tarsi dusky; the wings hyaline, the nervures ferruginous. Abdomen: the posterior margin of the segments broadly and deeply depressed, each segment with a large subovate macula on each side; beneath roughly punctured, the second and three following segments with a large yellow macula on each side, the fifth segment armed on each side with a long stout acute tooth which curves backwards; the apical segment lanceolate.

Hab. Australia (Swan River).

83. THYNNUS (AGRIOMYIA) COMBUSTUS. B.M.

Male. Length 4 lines.—Black, with the abdomen red: the clypeus very much produced, ferruginous anteriorly and truncate, the margins on each side of the truncation and a stripe on the mandibles yellowish-white; two minute white spots between the antennæ. The anterior margin of the prothorax with a

narrow line on each side, a spot on the tegulæ, a minute one on the scutellum, and the post-scutellum, yellow; wings subhyaline, nervures fuscous. The base of the abdomen black, the margins of the segments deeply constricted; an oblong yellow spot on each side of the second and third segments; beneath, the apical ventral segment rounded at its apical margin and with a minute tooth in the middle.

Hab. Australia.

84. THYNNUS (AGRIOMYIA) CRYPTOIDES. B.M.

Male. Length 4 lines.—Head and thorax black, the legs and abdomen ferruginous; the five or six apical joints of the antennæ arcuate; the orbits of the eyes interrupted at their vertex, the clypeus, margins of the face on each side of the clypeus, and the mandibles, yellow; the base of the clypeus black. Thorax bright shining black; the mesothorax punctured; the metathorax delicately transversely aciculate; the margins of the prothorax slightly interrupted in the middle, a spot on the mesothorax, an angular spot on the scutellum, a lunate one on the post-scutellum, yellow; the coxæ black, with their apex and the outside of the intermediate and posterior pairs ferruginous; the wings hyaline, the nervures ferruginous. Abdomen: the base black and subpetiolate; the apical ventral segment lanceolate, with a minute curved black spine at the apex.

Female. Length 2½ lines.—Ferruginous: the thorax and the third, fourth, and fifth segments of the abdomen more or less fuscous; the head and the tibiæ and tarsi pale; the head smooth, the thorax punctured; the second segment of the abdomen with four deep transverse grooves, the following segments with scattered shallow punctures.

Hab. Australia (River Plenty).

85. THYNNUS (AGRIOMYIA) VOLATILIS. B.M.

Male. Length 4¼ lines.—Black, with the abdomen and legs ferruginous. The anterior margins of the face and clypeus, the mandibles, a spot above the insertion of each antenna, and a very narrow line at the inner orbit of the eyes, yellow; an obscure ferruginous line on the posterior margin of the vertex, more or less interrupted. The anterior and posterior margins of the prothorax very narrowly testaceous; wings hyaline, their nervures fusco-ferruginous; the coxæ, trochanters, and base of the abdomen black.

Hab. Australia.

86. Thynnus (Agriomyia) Tryphonoides. B.M.

Male. Length 4 lines.—Head and thorax black; abdomen and legs ferruginous. The clypeus much produced, its apex as well as the mandibles yellow, the latter ferruginous at their tips; antennæ shorter than the thorax, the joints subarcuate. The prothorax above, the tegulæ, and post-scutellum yellow; the wings subhyaline and iridescent, the nervures fuscous, becoming pale ferruginous towards their base; the coxæ, trochanters, and base of the femora black. Abdomen widened towards its apex, its extreme base and two transverse spots beneath, black; the extreme base of the fourth and fifth segments above, fuscous; the head and thorax with a thin pale fulvous pubescence.

Hab. Australia (Adelaide).

87. Thynnus (Agriomyia) Cerceroides. B.M.

Male. Length 4½ lines.—Black, much variegated with yellow: the head and thorax strongly punctured; the clypeus, mandibles, a spot above the insertion of each antenna, a line on the inner and outer orbits of the eyes, yellow. Thorax: a line on the anterior and posterior margins of the prothorax (the former interrupted), a large irregular-shaped spot beneath the wings, with a smaller one behind it, a large curved macula at the sides of the metathorax, a lunate spot on the scutellum and the post-scutellum, yellow; the legs yellow, with black and ferruginous stains; the wings hyaline, the nervures testaceous. Abdomen: the segments deeply constricted, the five basal segments with oblong maculæ on each side, the maculæ emarginate in front; beneath, the second, third, fourth, and fifth segments with an oblong macula at their lateral margins, and the apical segment with a short stout tooth on each side.

Hab. Australia.

88. Thynnus (Agriomyia) tristis. B.M.

Male. Length 5 lines.—Black: clothed with cinereous pubescence, rather densely so on the face and sides of the thorax; that on the abdomen thin and downy; the head and thorax closely punctured, the base of the metathorax shining and delicately striated; wings hyaline and iridescent, the nervures black; the tibiæ with pale testaceous spines at their apex.

Hab. Australia.

89. Thynnus (Agriomyia) ruficornis. B.M.

Male. Length 5 lines.—Black: the head and thorax closely punctured, the base of the metathorax shining and impunctate;

abdomen shining, and having a number of scattered shallow punctures, covered with a thinly scattered griseous pubescence; wings hyaline and iridescent, the nervures and tegulæ rufo-testaceous. The antennæ, anterior margin of the clypeus, the mandibles and legs, ferruginous.

Hab. Australia (Swan River).

90. THYNNUS (AGRIOMYIA) SEDULUS. B.M.

Male. Length 3½ lines.—Black, with the legs, the apex of the first, the second, third, and fourth segments of the abdomen ferruginous; a few scattered hairs on the head and thorax, the abdomen having a thin clothing of longer hair at its apex. The clypeus rufo-testaceous, with its margins, the inner orbit of the eyes, the mandibles, and an interrupted line behind the eyes, yellow; an interrupted line on the prothorax in front and a spot beneath the wings yellow; the coxæ and trochanters black; the wings hyaline and iridescent, their nervures, and also the tegulæ, rufo-testaceous.

Hab. Australia.

91. THYNNUS (AGRIOMYIA) FALLAX. B.M.

Male. Length 5 lines.—Black: head and thorax very closely punctured; abdomen smooth, shining, and with a few widely scattered delicate punctures. The clypeus with a small shining tubercle in the middle, its anterior margin truncate; the mandibles and antennæ ferruginous, four or five of the apical joints of the latter fuscous, and the tips of the former blackish; the wings flavo-hyaline, the nervures ferruginous, becoming testaceous towards the base of the wings, the tegulæ rufo-testaceous; the legs ferruginous, with the coxæ, trochanters, and base of the femora black; the apex of the abdomen with a little fulvous pubescence.

Hab. Australia (Adelaide).

92. THYNNUS (AGRIOMYIA) MINUTUS. B.M.

Male. Length 2½ lines.—Black: the head and thorax variegated with yellow, the abdomen reddish in the middle. The clypeus, mandibles, and two abbreviated lines between the antennæ yellow. The anterior and posterior margins of the prothorax, the tegulæ, extreme base of the wings, a bell-shaped spot on the scutellum, a line at the sides of the metathorax, and a spot beneath the wings, yellow; the latter hyaline and iridescent, with the nervures rufo-testaceous; the legs rufo-testaceous; the coxæ black, spotted with yellow. Abdomen rufo-testaceous,

with the base and apical portion more or less fuscous, the extreme apex pale, the apical margins of the second, third, and fourth segments fuscous; a yellowish-white spot at the extreme lateral margin of each segment.

Hab. Australia.

93. THYNNUS (AGRIOMYIA) MŒSTUS.

Male. Length 6½ lines.—Black: the head and thorax closely punctured, the legs red, the abdomen with a number of glaucous spots. The anterior margin of the clypeus yellowish-white; the mandibles ferruginous, their apex bidentate. Thorax: the prothorax with a narrow pale testaceous margin in front, the postscutellum pale testaceous; wings fusco-hyaline, their nervures dark ferruginous. Abdomen shining, and having a number of transverse punctures, the apical portion of each segment smooth and impunctate; the second, third, fourth, and fifth segments with two central and one lateral irregularly-shaped glaucous spots; beneath, the second and two following segments with a central transverse spot.

Female. Length 4 lines.—Black: head and legs ferruginous; thorax punctured; the basal segment of the abdomen punctured, the second with four deep transverse grooves.

Hab. Australia (Port Philip). (Coll. W. W. Saunders, Esq.)

94. THYNNUS (AGRIOMYIA) PETIOLATUS.

Male. Length 4¾ lines.—Black: the head and thorax covered with strong confluent punctures; antennæ orange-red; wings hyaline, with their apical margins faintly clouded, the nervures dark fuscous; the intermediate and posterior tibiæ serrated exteriorly. Abdomen ovate, smooth and shining, the basal segment forming a short petiole at its base.

Hab. Australia (Hunter River). (Coll. W. W. Saunders, Esq.)

95. THYNNUS (AGRIOMYIA) LUCIDUS.

Male. Length 4½ lines.—Jet-black and shining: the mandibles and legs pale ferruginous; the clypeus elevated, carinate in the middle and bidentate at the apex. The head and thorax with shallow punctures; the metathorax smooth and shining, its truncation rugose; the wings hyaline and iridescent, the nervures ferruginous. Abdomen smooth and shining, very delicately punctured, the margins of the segments slightly depressed.

Hab. Tasmania. (Coll. W. W. Saunders, Esq.)

96. THYNNUS (AGRIOMYIA) MAURUS.

Male. Length 10 lines.—Black: head and thorax finely punctured, the punctures distant on the vertex, disk of the mesothorax, and on the scutellum; the clypeus convex, its anterior margin truncate; the cheeks, thorax on the sides and beneath covered with cinereous pubescence; the legs have also a cinereous pubescence; the wings dark brown, with a bright purple iridescence; the apex of the anterior wings pale. Abdomen smooth and shining, and having a few distant minute punctures; the margins of the segments depressed, and with a transverse impressed line at the base of each segment; the apical segment above rounded, the ventral plate somewhat triangular, with a minute tooth at the apex; the sixth ventral segment with a tooth at each posterior lateral angle.

Hab. Australia. (Coll. W. W. Saunders, Esq.)

97. THYNNUS (AGRIOMYIA) CRABRONIFORMIS.

Male. Length 4 lines.—Black, with yellow bands on the abdomen; the mandibles and clypeus yellow; the antennæ ferruginous beneath. Thorax: two oblique lines on the prothorax, a spot on the tegulæ, a minute one on the scutellum and the post-scutellum, yellow; wings hyaline, with the nervures rufo-testaceous; the tibiæ, tarsi, and tips of the femora rufo-testaceous, the posterior tarsi yellow, the apical joint ferruginous. Abdomen: the second, fifth, sixth, and seventh segments yellow.

Hab. Australia. (Coll. W. W. Saunders, Esq.)

98. THYNNUS (AGRIOMYIA) ANILITATIS.

Male. Length 6½ lines.—Black: head and thorax covered with long pubescence, that on the head above and on the disk of the thorax slightly fulvous; on the cheeks, thorax beneath, and on the metathorax and legs it is cinereous; the clypeus with a central longitudinal carina; the mandibles yellow. The wings hyaline or faintly yellowish, the nervures brown, the stigma black; the tibiæ with their calcaria white, the claws of the tarsi ferruginous. Abdomen subpetiolate, the margins of the segments depressed, sparingly pubescent above, more thickly so beneath.

Female. Length 4½ lines.—Black: the head smooth, shining, and delicately and distantly punctured. Thorax finely rugose, metathorax obliquely truncate; the articulations of the legs and the spines of the tarsi ferruginous. Abdomen: the basal segment rugose, with a transverse carina near its apex; the second segment with a transverse carina at the base and apex, with the intervening space coarsely rugose; the following segment rugose,

with a smooth shining space at the base; the rugose portion of the segments covered with cinereous pubescence.

Hab. Australia.

99. THYNNUS (AGRIOMYIA) IRIDIPENNIS.

Male. Length 3½ lines.—Black, shining, and punctured: the anterior margin of the clypeus and of the face, and a spot at the base of the mandibles, white; a minute spot above each antenna and a minute obscure one at the summit of the eyes yellow; the head with long thin cinereous pubescence. Thorax: an obscure line on each side of the anterior margin of the prothorax, the posterior margin, the tegulæ, a spot on the scutellum, and the post-scutellum, obscure yellow; the calcaria and spines of the tarsi white; the wings hyaline and splendidly iridescent, the nervures testaceous. Abdomen: the margins of the segments constricted; beneath, the apical segment truncate, the angles of the truncation with minute teeth, and with a longer acute one in the middle.

Female. Length 1¾ line.—Obscure rufo-testaceous: head smooth and shining; thorax sparingly punctured; the legs, basal and apical segments of the abdomen pale rufo-testaceous; the second segment with two transverse carinæ.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

100. THYNNUS (AGRIOMYIA) TRUNCATUS.

Male. Length 4–4½ lines.—Black, slightly shining, and thinly clothed with cinereous pubescence: the clypeus truncate anteriorly, the margin on each side of the truncation, a spot at the base of the mandibles, a narrow line on each side of the anterior margin of the prothorax, and the post-scutellum, or a line upon it, yellowish-white; the wings hyaline, the nervures black. The margins of the segments of the abdomen deeply constricted; beneath, the apical margins narrowly testaceous, the terminal segment truncate, or slightly emarginate its entire width at its apical margin; in the middle of the emargination an acute spine.

Hab. Australia (Lower Plenty, Victoria). (Coll. R. Bakewell, Esq.)

101. THYNNUS (AGRIOMYIA) TRIVIALIS.

Male. Length 4 lines.—Black: head and thorax closely punctured and opake, the metathorax and abdomen smooth and shining, the former very delicately reticulated. The anterior margin of the clypeus and of the face, as well as the mandibles, yellow; the legs ferruginous, the coxæ and trochanters black, the claw-joint of the tarsi fuscous; the anterior and posterior

margins of the prothorax, an ovate spot on the scutellum, and the post-scutellum, yellow; the fasciæ on the prothorax slightly interrupted; wings hyaline, faintly yellowish. Abdomen: a pale yellow ovate spot on each side of the second, third, and fourth segments.

Female. Length 3 lines.—Brown-black: the head smooth and shining, with a few scattered punctures; the thorax and abdomen finely rugose, the basal margins of the segments of the abdomen finely striated; the second segment with four deep transverse grooves; the apical margins of the segments narrowly, and the apical segment entirely, rufo-testaceous; the face anteriorly, the antennæ, mandibles, and legs rufo-testaceous.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

102. THYNNUS (AGRIOMYIA) ICHNEUMONIFORMIS.

Male. Length 4½ lines.—Head, thorax, and extreme base of the abdomen black; legs and abdomen ferruginous; the coxæ black, the trochanters more or less black; the anterior margin of the face and clypeus, uniting with a triangular spot on the latter, and the mandibles, yellow; sometimes the margins of the face and clypeus are black; two oblique yellow spots between the antennæ, an interrupted line on the collar, and a curved line before the tegulæ, yellow. The wings hyaline, the nervures brown; the apical segments of the abdomen sometimes with blackish stains, the apex rounded; beneath, the apical segment is narrowed and ciliated.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

103. THYNNUS (AGRIOMYIA) BREVICORNIS.

Male. Length 3½–5 lines.—Black, slightly shining, and punctured: the antennæ shorter than the head and thorax; thinly clothed with cinereous pubescence; the thorax rather strongly punctured above, the metathorax rugose, with the base very delicately rugose; the wings hyaline and iridescent, the nervures testaceous. Abdomen: the margins of the segments depressed, each segment with a raised curved shape on each side, which is impunctate or slightly punctured; beneath, strongly punctured, the terminal segment rounded at its apex, which is ciliated, with short rigid hairs.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

104. THYNNUS (AGRIOMYIA) MONILICORNIS.

Male. Length 4–4½ lines.—Black, slightly shining: head and thorax closely punctured, thinly covered with cinereous glittering

pubescence; the joints of the antennæ arcuate, or rather, much produced at their base beneath. Thorax: the wings hyaline, faintly tinted towards their apex, the nervures black. Abdomen much narrowed at the base, subpetiolate, the basal segment with a central impressed line; the apical appendage narrowed at the base, and with an angular tooth in the middle of its apical margin.

Female. Length 2 lines.—Head, thorax, legs, and base of the abdomen rufo-testaceous; head and thorax sparingly punctured, the truncation of the metathorax smooth and shining; the second segment of the abdomen transversely rugose; the third, fourth, and fifth segments fusco-ferruginous, and thinly sprinkled with short cinereous hairs; the apex pale testaceous.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

105. THYNNUS (AGRIOMYIA) CALCARATUS.

Male. Length 4 lines.—Black: head and thorax closely punctured and subopake, the base of the metathorax and the abdomen smooth and shining; the mandibles and anterior margin of the clypeus and face pale yellow; the head, thorax beneath and on the sides with long cinereous pubescence; the wings hyaline, with a brilliant iridescence; the tibiæ, tarsi, and tips of the femora ferruginous; the posterior femora with a blunt tooth in the middle beneath.

Hab. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

106. THYNNUS (LOPHOCHEILUS) VILLOSUS.

Lophocheilus villosus, *Guér. Mag. Zool.* (1842); *Mon. Thynn.* 12. pl. 103.

Hab. Australia.

107. THYNNUS (LOPHOCHEILUS) DISTINCTUS.

Lophocheilus distinctus, *Guér. Mag. Zool.* (1842); *Mon. Thynn.* 12. pl. 103.

Hab. Australia.

108. THYNNUS (LOPHOCHEILUS) COLLARIS.

Lophocheilus collaris, *Guér. Mag. Zool.* (1842); *Mon. Thynn.* 13.

Hab. Australia.

109. THYNNUS (ENTELES) BICOLOR.

Thynnus (Enteles) bicolor, *Westw. Arc. Ent.* ii. 144. pl. 82. f. 4 ♀.

Hab. Australia (King George's Sound).

110. THYNNUS (CATOCHEILUS) DIVERSUS.

Catocheilus Klugii, *Guér. Mag. Zool.* (1842); *Mon. Thynn.* 8, 9 ♂ ♀.

Hab. Australia (Swan River).

111. THYNNUS (EIRONE) DISPAR.

Eirone dispar, *Westw. Arc. Ent.* ii. 144. 82. f. 5 ♂, f. 6 ♀.

Hab. Australia (Adelaide).

112. THYNNUS (EIRONE) TUBERCULATUS.

Male. Length 3⅛ lines.—Black: the head and thorax strongly and closely punctured, thinly covered with short white downy pubescence; the clypeus with a lanceolate white mark in the centre, which has a minute tubercle on each side about the middle; the mandibles ferruginous, with a white line at their base. The prothorax with a slightly interrupted white line on the anterior margin, and a widely interrupted one posteriorly; the wings splendidly iridescent and hyaline, the nervures testaceous; the tibiæ and tarsi rufo-testaceous. Abdomen lanceolate, the apical segment rugose, pointed at the apex.

Female. Length 2⅓ lines.—Pale ferruginous: the legs pale rufo-testaceous; the head oblong-quadrate; the thorax of the same form as in *T. vitripennis*; the metathorax delicately aciculate and with a few elongate punctures. Abdomen elongate, each segment with a curved dark ferruginous line on each side; thinly covered with strong elongate punctures; the apex acute.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

113. THYNNUS (EIRONE) VITRIPENNIS.

Male. Length 3¼ lines.—Black, shining: the head and thorax with shallow punctures; slightly pubescent at the sides of the head, on the thorax beneath and on the sides, and on the posterior portion of the metathorax; the legs have also a slight griseous pubescence. The clypeus with a sharp carina in the middle and a triangular white spot in front; a narrow white line runs from the clypeus to the margin of the eyes; a line at the base of the mandibles, and two small oblique ones between the antennæ, white; the mandibles obscurely ferruginous. Thorax: a narrow white line on the anterior margin of the prothorax; wings hyaline, faintly tinted with yellow, and splendidly iridescent; the legs rufo-testaceous, with the tarsi palest. Ab-

domen lanceolate; the apical segment rounded, punctured at the base, and glassy smooth at the apex.

Female. Length 2¼ lines.—Pale ferruginous: the head oblong-quadrate; the thorax narrower than the head, the sides of the prothorax slightly rounded, the mesothorax narrow and quadrate above; the metathorax widened to its apex, which is rounded. Abdomen elongate, as long as the head and thorax, and entirely smooth and shining; the apex acute.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

114. THYNNUS ATTENUATUS. B.M.

Female. Length 4½ lines.—Head black, compressed, smooth, subopake, rounded behind, anteriorly truncate; the face, mandibles, antennæ, legs, and thorax anteriorly, rufo-testaceous; the thorax compressed, very narrow anteriorly; the metathorax narrowed at the base; abdomen obscure rufo-testaceous, with a tuft of pale pubescence at the base; the second segment transversely striated.

Hab. Australia.

115. THYNNUS FIMBRIATUS. B.M.

Female. Length 4 lines.—Head and abdomen black; thorax and legs ferruginous, the prothorax prolonged into a neck; thorax strongly punctured; the first and second segments of the abdomen transversely striated, the three following punctured at their apical margins, the apical one longitudinally striated; the base fringed with long silvery-white hair.

Hab. Australia.

116. THYNNUS QUADRATUS. B.M.

Female. Length 3 lines.—Head and thorax anteriorly ferruginous; thorax posteriorly, legs, and abdomen obscure fusco-ferruginous; thorax oblong-quadrate, constricted between the meso- and metathorax, the latter vertically truncate, the upper margin of the truncation rounded; the second segment of the abdomen transversely furrowed in the middle.

Hab. Australia.

117. THYNNUS SULCATUS. B.M.

Female. Length 4 lines.—Head, thorax, and legs pale rufo-testaceous; abdomen fusco-ferruginous, palest towards the apex; the front very prominent, with a broad deep sulcation on each side; the metathorax oblique, smooth and shining.

Hab. Australia.

118. THYNNUS COMPRESSUS. B.M.

Female. Length 5 lines.—Head bright castaneous, flattened, smooth and shining; thorax beneath, the legs, and second segment of the abdomen rufo-testaceous; the disk of the thorax obscure fusco-ferruginous; the anterior margin transverse, with the lateral angles acute; the metathorax oblique, with a few delicate punctures, the pro- and mesothorax with scattered punctures.

Hab. Australia.

119. THYNNUS SULCIFRONS. B.M.

Female. Length 5 lines.—Head ferruginous, flattened, widened and rounded behind the eyes, with a longitudinal excavation on each side; the mandibles simple, falcate, and acute at the apex, the apex black; thorax black, smooth and shining; the metathorax narrowed at the base, truncate behind. Abdomen variegated with yellow bands; the basal segment with an uninterrupted fascia, a spot on each side of the second, the third and fourth with an interrupted fascia.

Hab. Australia.

120. THYNNUS MOLITOR. B.M.

Female. Length 10 lines.—Black, shining: front coarsely punctured; prothorax transverse in front and narrowed behind; metathorax obliquely truncate; base of the abdomen closely punctured, the second segment transversely striated, the apical one longitudinally so.

Hab. S. Australia.

(Probably the ♀ of *T. Klugii.*)

121. THYNNUS DILATATUS. B.M.

Female. Length 6½ lines.—Black, slightly shining: head small; anterior margin of the thorax slightly incurved; metathorax abruptly truncate; intermediate tibiæ very broadly dilated; the two basal segments of the abdomen transversely striated, the four following smooth and shining.

Hab. Australia.

122. THYNNUS ADUSTUS. B.M.

Female. Length 6 lines.—Dark reddish-brown above, beneath ferruginous; closely punctured, the punctures confluent on the head and thorax; the metathorax oblique; the legs, antennæ, and front of the head ferruginous.

Hab. Australia.

123. THYNNUS CRASSIPES. B.M.

Female. Length 5 lines.—Black: head shining, with large deep punctures; thorax smooth and shining in front, the anterior margin incurved to the form of the head; metathorax punctured, obliquely truncate, and covered, as well as the base of the abdomen and the legs, with glittering white pubescence; the femora and tibiæ incrassate; the two basal segments of the abdomen with deep transverse furrows; the apical segment compressed, forming above a flattened oblong surface, narrowest at the base, which is grooved in curves transversely; the apex with a semicircular thin membrane.

Hab. Australia.

124. THYNNUS LÆVICEPS. B.M.

Female. Length 4 lines.—Dark red-brown: the head and thorax in front smooth and shining; the metathorax oblique and strongly punctured, sprinkled with silvery hair, as are also the legs and base of the abdomen; the truncated portion of the abdomen punctured, above smooth and shining; the second segment transversely striated; the apical segment longitudinally striated.

Hab. Australia.

125. THYNNUS SERRIPES. B.M.

Female. Length 4 lines.—Black: the legs ferruginous, the coxæ black, the intermediate and posterior tibiæ serrated externally and covered with rigid setæ, the posterior tarsi fuscous; the head and thorax with distant punctures; the metathorax truncate, its upper surface semicircular; the abdomen with scattered punctures; the second segment irregularly transversely striated, the apical segment longitudinally so.

Hab. Australia.

126. THYNNUS SIGNATUS. B.M.

Female. Length $4\frac{3}{4}$ lines.—Ferruginous: the abdomen with five broad yellow fasciæ, the three apical ones slightly interrupted; all the fasciæ with a ferruginous spot or line at their lateral margins; the head and thorax punctured; the metathorax blackish.

Hab. Australia.

127. THYNNUS PUNCTATUS. B.M.

Female. Length $4\frac{1}{4}$ lines.—Head and thorax brownish-black; the abdomen black, entirely covered with punctures, those on

the head and thorax strongest; thorax strangulated in the middle; the metathorax oblique.

Hab. Australia.

128. THYNNUS FLAVOFASCIATUS. B.M.

Female. Length 4½ lines.—Head and thorax rufo-ferruginous; the head posteriorly, the thorax in front, and two large oblique maculæ on the metathorax, yellow; the tibiæ serrated exteriorly; the abdomen dark ferruginous, with five broad yellow bands, the second and third narrowest, and the apical one slightly interrupted in the middle.

Hab. Australia (Swan River).

129. THYNNUS TRISULCATUS. B.M.

Female. Length 3 lines.—Black: head and thorax strongly punctured; antennæ and mandibles ferruginous; legs rufo-piceous, with the tarsi paler; thorax transverse in front, produced into a neck, deeply strangulated in the middle; metathorax narrow at the base, rounded and widened at the apex; abdomen with shallow punctures, the second segment with three transverse deep furrows.

Hab. Australia.

130. THYNNUS LÆVIFRONS. B.M.

Female. Length 4 lines.—Nigro-piceous: head compressed, very smooth and shining; flagellum fulvous beneath; mandibles rufo-testaceous; the anterior margin of the thorax rounded, notched in the middle, the notch continued into an abbreviated channel; the metathorax oblique, narrowed at the base; abdomen with fine shallow punctures, the second segment with four deep transverse furrows.

Hab. Australia.

131. THYNNUS CONNECTENS. B.M.

Female. Length 5½ lines.—Dark rufo-fuscous: the head rufo-testaceous, smooth and shining; the metathorax obliquely truncate; an irregular narrow transverse band on the first segment of the abdomen, a spot on each side of the second, the three following with broad bands slightly interrupted, the bands with a minute ferruginous spot laterally; the apical segment longitudinally striated.

Hab. West Australia.

132. THYNNUS LONGICEPS. B.M.

Female. Length $2\frac{3}{4}$ lines.—Black, smooth, and shining: the antennæ, mandibles, and tarsi pale rufo-testaceous; the head oblong, narrowed behind; the prothorax with a deep central depression in front; the intermediate and posterior tibiæ serrated; the second segment transversely striated, the margins of the segments pale testaceous.

Hab. Tasmania.

133. THYNNUS ROTUNDICEPS. B.M.

Female. Length 4 lines.—Blackish-brown, with the antennæ, face anteriorly, mandibles, tarsi, margins of the abdominal segments, and the tip of the abdomen, rufo-testaceous; the head rounded and flattened, with the eyes placed very forward at the sides, close to the base of the mandibles.

Hab. Australia.

134. THYNNUS PLANIFRONS. B.M.

Female. Length 3 lines.—Black, with a brown tinge: the head very smooth and shining; the thorax and abdomen with large distant punctures; the flagellum of the antennæ and apical joints of the tarsi pale rufo-testaceous; the apical margins of the abdominal segments pale testaceous; the second segment with a deep transverse channel.

Hab. Australia.

Species of South America and Brazil.

135. THYNNUS (TELEPHOROMYIA) RUFIPES.

Telephoromyia rufipes, *Guér. Voy. Coq. Zool.* ii. 216 ♂.
Thynnus rufipes, *Klug, Berl. Abhandl.* (1842) 41. 59.

Hab. Chili (Patagonia).

136. THYNNUS (ONODONTYRA) TRICOLOR.

Onodontyra tricolor, *Westw. Proc. Zool. Soc. Lond.* (1835) pl. 3. 71 ♂.
Thynnus tricolor, *Klug, Berl. Abhandl.* (1842) 40. 57.

Hab. Chili.

137. THYNNUS (ORNEPTES) NIGRICEPS.

Orneptes nigriceps, *Guér. Voy. Coq. Zool.* ii. 239 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 104.
Thynnus nigriceps, *Klug, Berl. Abhandl.* (1842) 42. 60.

Hab. Chili.

138. THYNNUS (ELAPHROPTERA) PALLIDIPENNIS. B.M.

Myrmosa dimidiata, *Halid. Linn. Trans.* xvii. 328. 46 ♂.
Elaphroptera dimidiata, *Guér. Voy. Coq. Zool.* ii. 240; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.
Elaphroptera pallidipennis, *Guér. Voy. Coq. Zool.* ii. 241.
Thynnus dimidiatus, *Klug, Berl. Abhandl.* (1842) 38. 49.
Hab. Chili.

139. THYNNUS (ELAPHROPTERA) ATER.

Elaphroptera atra, *Guér. Voy. Coq. Zool.* ii. 241 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.
Thynnus ater, *Klug, Berl. Abhandl.* (1842) 39. 53 ♂.
Hab. Chili.

140. THYNNUS FASCIATUS.

Elaphroptera fasciata, *Guér. Voy. Coq. Zool.* ii. 242; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.
Thynnus fasciatus, *Klug, Berl. Abhandl.* (1842) 25. 21.
Hab. Patagonia.

141. THYNNUS CORNUTUS.

Elaphroptera cornuta, *Guér. Voy. Coq. Zool.* ii. 243 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.
Thynnus cornutus, *Klug, Berl. Abhandl.* (1842) 33. 39.
Hab. Brazil.

142. THYNNUS MACULIPENNIS.

Elaphroptera maculipennis, *Guér. Voy. Coq. Zool.* ii. 243 ♂; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.
Thynnus maculipennis, *Klug, Berl. Abhandl.* (1842) 26. 24.
Hab. Brazil.

143. THYNNUS APICALIS.

Elaphroptera apicalis, *Guér. Voy. Coq. Zool.* ii. 244 ♂.
Thynnus apicalis, *Klug, Berl. Abhandl.* (1842) 27. 27; *Mag. Zool.* (1842) *Mon. Thynn.* p. 14. pl. 105.
Hab. Brazil.

144. THYNNUS (AMMODROMUS) FRONTALIS.

Ammodromus frontalis, *Guér. Voy. Coq. Zool.* ii. 245 ♂ ; *Mag. Zool.* (1842) *Mon. Thynn.* p. 15. pl. 105.
Thynnus frontalis, *Klug, Berl. Abhandl.* (1842) 37. 47.
Hab. Patagonia.

145. THYNNUS (AMMODROMUS) RUFICEPS.

Ammodromus ruficeps, *Guér. Voy. Coq. Zool.* ii. 245 ♀.
Thynnus ruficeps, *Klug, Berl. Abhandl.* (1842) 37. 48.
Hab. Brazil (Currientes).

146. THYNNUS (AMMODROMUS) SCOLIÆFORMIS.

Myrmecodes scoliæformis, *Halid. Linn. Trans.* xvii. 327. 45 ♀.
Ammodromus scoliæformis, *Guér. Voy. Coq. Zool.* ii. 246.
Thynnus scoliæformis, *Klug, Berl. Abhandl.* (1842) 38. 50.
Hab. Chili.

147. THYNNUS (AMMODROMUS) VARIUS.

Myrmecoda varia, *Perty, Del. An. Art.* p. 138. t. 27. f. 10 ♀.
Ammodromus varius, *Guér. Voy. Coq. Zool.* p. 246.
Thynnus varius, *Klug, Berl. Abhandl.* (1842) 30. 32.
Hab. Brazil.

148. THYNNUS (AMBLYSOMA) LATREILLII.

Thynnus (Amblysoma) Latreillii, *Westw. Guérin's Mag. Zool.* (1841-2) pl. 80 ♂.
Hab. Brazil.

149. THYNNUS ICHNEUMONEUS.

Thynnus ichneumoneus, *Klug, Berl. Abhandl.* (1842) 25. 22.
Hab. Brazil.

150. THYNNUS CONSOBRINUS.

Thynnus consobrinus, *Klug, Berl. Abhandl.* (1842) p. 26. 23.
Hab. Brazil.

151. THYNNUS INTERRUPTUS.

Thynnus interruptus, *Klug, Berl. Abhandl.* (1842) 26. 25 ♂.
Hab. Brazil.

152. THYNNUS ANALIS.
Thynnus analis, *Klug, Berl. Abhandl.* (1842) 27. 26 ♂.
Hab. Brazil.

153. THYNNUS MYSTACINUS.
Thynnus mystacinus, *Klug, Berl. Abhandl.* (1842) 27. 28 ♂.
Hab. Brazil.

154. THYNNUS HÆMORRHOIDALIS.
Thynnus hæmorrhoidalis, *Klug, Berl. Abhandl.* (1842) 28. 29 ♂.
Hab. Brazil.

155. THYNNUS PICTUS.
Thynnus pictus, *Klug, Berl. Abhandl.* (1842) 29. 30 ♀.
Hab. Brazil.

156. THYNNUS ORNATUS.
Thynnus ornatus, *Klug, Berl. Abhandl.* (1842) 29. 31 ♀.
Hab. Brazil.

157. THYNNUS INTERMEDIUS.
Thynnus intermedius, *Klug, Berl. Abhandl.* (1842) 30. 33 ♀.
Hab. Brazil.

158. THYNNUS PUBESCENS.
Thynnus pubescens, *Klug, Berl. Abhandl.* (1842) 31. 34 ♂.
Hab. Brazil.

159. THYNNUS LEPIDUS.
Thynnus lepidus, *Klug, Berl. Abhandl.* (1842) 31. 35 ♂.
Hab. Brazil.

160. THYNNUS VINCULATUS.
Thynnus vinculatus, *Klug, Berl. Abhandl.* (1842) 32. 36.
Hab. Brazil.

161. THYNNUS TRIFASCIATUS.
Scotena trifasciata, *Klug, Mag. d. Ges. Nat. Fr. z. Berl.* iv. p. 40. t. 1. f. 4 ♂.
Thynnus trifasciatus, *Klug, Berl. Abhandl.* (1842) 32. 37.
Hab. Brazil.

162. THYNNUS HISTRIO.
Thynnus histrio, *Klug, Berl. Abhandl.* (1842) 33. 38 ♂.
Hab. Brazil.

163. THYNNUS VERSICOLOR.
Thynnus versicolor, *Klug, Berl. Abhandl.* (1842) 34. 40 ♂.
Hab. Brazil.

164. THYNNUS LATERALIS.
Thynnus lateralis, *Klug, Berl. Abhandl.* (1842) 34. 41. f. 6 ♂.
Hab. Brazil.

165. THYNNUS CLITELLATUS.
Thynnus clitellatus, *Klug, Berl. Abhandl.* (1842) 35. 42. f. 5 ♀.
Hab. Brazil (Minas Geraes).

166. THYNNUS SPHEGEUS.
Thynnus sphegeus, *Klug, Berl. Abhandl.* (1842) 35. 43 ♂.
Hab. Brazil.

167. THYNNUS QUADRICINCTUS.
Thynnus quadricinctus, *Klug, Berl. Abhandl.* (1842) 36. 44 ♂.
Hab. Brazil.

168. THYNNUS VULPINUS.
Thynnus vulpinus, *Klug, Berl. Abhandl.* (1842) 36. 45 ♂.
Hab. Brazil.

169. THYNNUS HÆMATODES. Plate III. fig. 16 ♂.
Thynnus hæmatodes, *Klug, Berl. Abhandl.* (1842) 37. 46. f. 7 ♂, f. 8 ♀.
Hab. Brazil.

170. THYNNUS ÆTHIOPS. B.M.
Thynnus æthiops, *Klug, Berl. Abhandl.* (1842) 38. 51 ♂.
Hab. Brazil.

171. THYNNUS ANTHRACINUS.
Thynnus anthracinus, *Klug, Berl. Abhandl.* (1842) 39. 52 ♂.
Hab. Brazil.

172. THYNNUS TARSATUS.

Thynnus tarsatus, *Klug, Berl. Abhandl.* (1842) 39. 54 ♂.

Hab. Brazil.

173. THYNNUS PHILANTHOIDES.

Thynnus philanthoides, *Klug, Berl. Abhandl.* (1842) 40. 55. f. 9 ♂.

Hab. Brazil (Porto Alegre).

174. THYNNUS SCUTELLARIS.

Thynnus scutellaris, *Klug, Berl. Abhandl.* (1842) 40. 56 ♂.

Hab. Brazil (St. Joao del Rey).

175. THYNNUS LÆTUS.

Thynnus lætus, *Klug, Berl. Abhandl.* (1842) 41. 58. f. 10 ♂.

Hab. Chili.

176. THYNNUS ELEGANS.

Male. Length 9 lines.—Black, variegated with yellow: the mandibles, clypeus, face on each side of it, and a broad stripe behind the eyes, yellow. The anterior and posterior margins of the prothorax, a large oblong macula beneath the wings, the scutellum, post-scutellum, and metathorax, yellow; the legs pale ferruginous, the femora yellow beneath, above black; wings slightly coloured, with a fuscous cloud occupying the apex of the marginal and the third submarginal cells. Abdomen: the basal segment yellow, with a black line down the middle, the following segments with a large ovate macula on each side; the head and thorax with confluent punctures; the abdomen with close, fine, shallow punctures.

Hab. South America.

177. THYNNUS DECORUS. B.M.

Male. Length 6 lines.—Black, shining, and punctured throughout; not very closely so: the clypeus, mandibles, inner orbits of the eyes, and an abbreviated line behind them, yellow. The anterior and posterior margins of the prothorax yellow, the former slightly, the latter widely interrupted; the tegulæ, an irregularly-shaped spot beneath the wings, a spot on the disk of the mesothorax, a lunate one on the scutellum, the post-scutellum and a spot on each side, and a large curved spot on each side of the metathorax nearly meeting in the middle, yellow; wings hyaline and iridescent, with a dark fuscous cloud in the marginal

cell, the apical margins faintly clouded. Abdomen: the margins of the segments constricted; the basal segment with a fascia, and the second, third, and fourth with an interrupted one a little before their apical margins, the fascia widened at the lateral margins of the segments; the apical segment rugose, with elongate punctures.

Hab. Brazil (Santarem).

178. THYNNUS PLAGIATUS.

Male. Length 7½ lines.—Black: the clypeus, sides of the face, a spot above each antenna, the mandibles, and head behind the eyes, yellow. Thorax: the anterior and posterior margins of the prothorax, a quadrate spot in the middle of the mesothorax, the tegulæ in front and a spot behind them, the scutellum, post-scutellum, and metathorax, yellow; the femora yellow beneath; the anterior tibiæ and all the tarsi ferruginous; the wings hyaline, the nervures ferruginous; a fuscous spot occupies the apex of the marginal cell and the third submarginal cell. Abdomen: the first and four following segments with a large ovate yellow spot on each side.

Hab. South America.

179. THYNNUS (AGRIOMYIA) GRATIOSUS.

Male. Length 9 lines.—Black: finely punctured on the head and thorax; the seven apical joints of the antennæ arcuate; the inner orbits of the eyes, the lower portion of the outer orbits, a narrow line on the posterior margin of the vertex, which unites with the yellow line on the cheeks and is interrupted in the middle above, a spot between the ocelli, another at the insertion of each antenna, a spot on the clypeus, and the mandibles, yellow. Thorax: the anterior and posterior margins of the prothorax, three small oblong spots on the mesothorax, a line over the tegulæ, a spot on the scutellum and a smaller one at its basal angles, the post-scutellum, and the sides of the metathorax, yellow, the latter with a large irregularly-shaped black blotch; an irregular curved stripe beneath the wings, the femora beneath, and the coxæ spotted with yellow; the wings fulvo-hyaline. Abdomen: the four basal segments yellow, with their basal and apical margins ferruginous, and a number of small ferruginous spots at the lateral margins; an oblong black stain on the basal segment, emitting a short fork on each side at its apex; the sixth segment with an angular reddish-yellow spot on each side.

Hab. South America. (Coll. W. W. Saunders, Esq.)

180. THYNNUS (AGRIOMYIA) AMPLIPENNIS.

Male. Length 9 lines.—Shining black: head and thorax very closely punctured, the metathorax very delicately punctured and shining; the scutellum elevated into a tubercle; wings ample and of a rich golden-fulvous colour, the nervures ferruginous. Abdomen: the first segment much narrowed at the base, which has a deep abbreviated channel; the margins of the segment slightly depressed, covered with short black pubescence, and with a number of longer hairs at the tip; the head, sides of the thorax, and the anterior and intermediate tibiæ with long black hairs.

Hab. South America. (Coll. W. W. Saunders, Esq.)

Genus 2. ÆLURUS.

Agriomyia, pt., *Guér. Mag. Zool.* p. 5 (1842).
Ælurus, *Klug, Berl. Abhandl.* 42 (1840–42).

Species of Australia.

1. ÆLURUS ABDOMINALIS. B.M.

Agriomyia abdominalis, *Guér. Mag. Zool.* p. 5 (1842).
Ælurus abdominalis, *Westw. Arc. Ent.* ii. 122. pl. 77. f. 5 ♂.
Thynnus fervidus, *Erichs. Wiegm. Arch.* (1842) 263. 237 ♂.
Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

Of this species, which has the head and thorax black and the abdomen red, I have seen a fine variety with the thorax also red, having only a few dusky stains behind the scutellum, in the Collection of R. Bakewell, Esq.

2. ÆLURUS MŒRENS.

Ælurus mœrens, *Westw. Arc. Ent.* ii. 124 ♂.

Hab. Australia (Melbourne).

3. ÆLURUS SPINOLÆ.

Agriomyia Spinolæ, *Guér. Mag. Zool.* (1842) p. 6.

Hab. Australia.

4. ÆLURUS INCANUS. B.M.

Male. Length 7 lines.—Black: the head and thorax with strong confluent punctures, the metathorax more finely punctured, shining, and with long cinereous pubescence, the cheeks

with a long beard of the same colour; the wings hyaline, very slightly coloured, with a fuscous cloud at the apex of the marginal cell; the tibiæ and tarsi ferruginous, the apical joints of the latter fuscous. Abdomen shining and covered with shallow punctures, the base and beneath with cinereous pubescence; the apical ventral segment rounded at the apex, and with a minute tooth in the middle.

Hab. Australia (Port Stephen).

5. ÆLURUS SENEX. B.M.

Male. Length 5 lines.—Black: the head and thorax strongly punctured; the abdomen shining, slightly and delicately punctured; the face covered with cinereous pubescence, the cheeks with a long fringe of the same colour; the cheeks have a short, stout, acute tooth close to the base of the mandibles. The thorax with long loose cinereous pubescence; the mesothorax strongly punctured; the metathorax shining and finely punctured; the wings slightly coloured, with the nervures black. The abdomen shining and delicately punctured, the base and apex of the abdomen more strongly punctured; the basal segment with a central deeply impressed line; beneath and at the apex is a thin, long, loose pubescence; the apical ventral segment with a central acute tooth and a short rounded one on each side, and a short acute one outside.

Hab. Australia.

6. ÆLURUS AURIFRONS. B.M.

Male. Length 7½ lines.—Black, with the legs, the apical margin of the basal segment, and the second and third entirely red; the face and cheeks with a golden-yellow pubescence; the sides of the head fringed with long pale yellow hairs; a short blunt tooth on the cheeks, close to the base of the mandibles. Thorax: the disk with golden-coloured pubescence; the metathorax, sides, and beneath with cinereous; the coxæ and trochanters black; the wings flavo-hyaline, the nervures ferruginous, the costal nervure blackish. Abdomen smooth and shining; the second segment beneath, tuberculate in the middle of its base; the apical segment rounded, with an acute spine in the middle.

Hab. W. Australia.

7. ÆLURUS VULPINUS. B.M.

Male. Length 7 lines.—Black: head and thorax very closely punctured and opake; the abdomen shining and delicately punc-

tured; the clypeus with the centre of its anterior margin testaceous; the mandibles ferruginous at their apex; the sides of the head and the mandibles with a long fringe of white pubescence; the face pubescent; a sharp tooth on the cheeks at the base of the mandibles. The thorax with white pubescence; the wings fulvo-hyaline, with a fuscous cloud at the apex of the marginal cell; the legs ferruginous, with the coxæ and base of the femora black. Abdomen: the apical ventral segment rounded, and having an acute spine in the middle.

Hab. Australia (Hunter River).

8. ÆLURUS BASALIS. Plate III. fig. 6 ♂. B.M.

Male. Length 6 lines.—Black and punctured: the clypeus with a central smooth shining carina, the anterior margin shining and truncate; the mandibles ferruginous towards their apex, the tips black; the cheeks produced into a stout spine at the base of the mandibles, with a long fringe of pale pubescence. Thorax: the posterior margin of the prothorax rufo-testaceous; the wings hyaline, the nervures dark fuscous, the tegulæ ferruginous; the legs ferruginous, with the coxæ and base of the femora black. Abdomen subpetiolate, delicately and distantly punctured; the basal segment closely punctured, with a central longitudinal impressed line, its apical margin, the second segment, and the sides of the third ferruginous; the apical ventral segment with a short spine at the apex, emanating from an angular process, which has a minute tooth at its base.

Hab. Australia.

9. ÆLURUS COMBUSTUS. B.M.

Male. Length 6½ lines.—Black and punctured: the margin of the tubercles above the insertion of the antennæ, the clypeus anteriorly, and the margins of the face on each side rufo-testaceous; the mandibles ferruginous, with their inner margin testaceous; the face with long glittering pale pubescence; the mandibles and lateral margins of the head with a long fringe of pale pubescence; a spine on the cheeks at the base of the mandibles. Thorax: the anterior margin of the prothorax pale testaceous, the posterior margin rufo-testaceous; wings hyaline, their nervures dark fuscous, becoming ferruginous towards their base, the tegulæ ferruginous. Abdomen black above, with the sides and beneath ferruginous; the apical margins of the segments narrowly ferruginous; the apical ventral segment rounded, with a slender acute spine in the middle.

Hab. Australia (Moreton Bay).

10. ÆLURUS PILOSULUS.

Male. Length 5½–7 lines.—Black: the head and disk of the thorax clothed with fulvous pubescence, the sides of the head with a long curled fringe of the same colour, the pubescence becoming very pale in worn specimens; the thorax beneath and the metathorax with cinereous pubescence; the abdomen covered with changeable pile, in certain lights having a golden lustre. The mandibles and legs ferruginous, the coxæ black; the cheeks produced into an acute tooth at the base of the mandibles; the posterior margin of the prothorax more or less rufo-testaceous; the wings hyaline, the nervures ferruginous; the abdomen subpetiolate; the apex with a short acute spine.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

11. ÆLURUS RUBELLUS.

Male. Length 4½ lines.—Black: head and thorax rugose, the metathorax punctured; the tips of the mandibles, the tibiæ, the tarsi, and the apex of the femora more or less ferruginous; the cheeks produced into an acute tooth at the base of the mandibles. The head and the thorax above with long fulvous pubescence; the sides of the thorax and the metathorax with cinereous pubescence; the wings hyaline, the nervures testaceous. Abdomen shining, subpetiolate, and with distant shallow punctures; the basal segment with a deeply impressed longitudinal line in the middle, not extending to the apex of the segment; the apical margin of the basal segment, the second, third, and base of the third at the sides, ferruginous; sometimes the second segment and base of the third at the sides only, ferruginous; beneath, the second, third, and sometimes the fourth, ferruginous; the apical ventral segment with a deep notch on each side and a slighter one within, and having in the middle an acute spine curved upwards.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

12. ÆLURUS FULVIFRONS.

Male. Length 6 lines.—Black: the head and the mesothorax thinly covered with short fulvous pubescence, that on the cheeks, thorax beneath, and on the metathorax, cinereous; the anterior margin of the clypeus and of the face on each side, and the mandibles, yellow. The margins of the prothorax, the tegulæ, an ovate spot on the scutellum, and the post-scutellum, yellow; the legs ferruginous, the coxæ and trochanters black; the wings hyaline, the nervures dark fuscous. Abdomen subpetiolate, smooth and shining, with an ovate yellowish-white macula on

each side of the second, third, and fourth segments; the terminal ventral segment lanceolate, with a sharp spine at the apex.

Hab. S. Australia (Lower Plenty).

Female. Length 3 lines.—Rufo-fuscous: the antennæ, mandibles, and legs pale rufo-testaceous; the head smooth and shining; the second segment of the abdomen with four deep transverse grooves; the apical segment ferruginous. (Coll. R. Bakewell, Esq.)

13. ÆLURUS BARBATUS.

Male. Length 6 lines.—Black: head and thorax rugose and thinly covered with cinereous pubescence, the sides of the head with a long curled fringe of the same colour; the cheeks produced into a short spine at the base of the mandibles; behind the eyes is an obscure ferruginous stripe. Thorax: the tips of the femora, the tibiæ, and the tarsi ferruginous; the wings hyaline, with a slight fulvous tinge; a small fuscous cloud in the marginal cell. Abdomen subpetiolate and shining; the apical ventral segment rounded at the apex, and with a minute tooth in the middle.

Female. Length 3¼ lines.—Dark fusco-ferruginous: the head anteriorly, the mandibles, the thorax, legs, and two basal segments of the abdomen, rufo-testaceous, the mandibles and prothorax palest; the thorax closely punctured, the head more sparingly so. Abdomen finely rugose, with a smooth shining space at the base of the segments, the second segment transversely coarsely and irregularly striated.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

14. ÆLURUS DENTATUS.

Male. Length 5½ lines.—Black: head and thorax rugose, the abdomen shining and subpunctate. Head transverse; the posterior margin of the vertex widely and very slightly emarginate; thinly covered with fulvous pubescence, the sides of the head with a long curled beard of the same; the mandibles ferruginous at their apex; close to their base the cheeks are produced into a short, stout, acute tooth. Thorax: the sides and beneath with griseous pubescence, on the disk it is slightly fulvous; wings hyaline, the nervures dark fuscous; the tibiæ and tarsi ferruginous. Abdomen subpetiolate; the basal segment with a central impressed line, not extending to the apex, and with a minute tooth on each side a little before the middle; the apical ventral segment truncate, with a short acute spine in the middle which emanates from a small truncate base.

Female. Length 4 lines.—The head, thorax, legs, and basal segment of the abdomen obscure blood-red, the rest of the abdomen black; the head, thorax, and base of the segments of the abdomen strongly punctured, the basal segment rugose.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

15. ÆLURUS FERVENS.

Male. Length 5½ lines.—Black: the head and thorax closely punctured, the metathorax finely so; the abdomen shining, and covered with fine, very shallow punctures. The head and disk of the thorax with a pale fulvous pubescence, on the sides of the thorax and beneath it is cinereous. The anterior margin of the appendage, beneath which the antennæ are inserted, yellow; the clypeus anteriorly and the mandibles yellow, the latter ferruginous at their apex; the sides of the head with a long fringe of pale hairs. The anterior and posterior margins of the prothorax yellow, the yellow colour uniting in the middle; the tegulæ and post-scutellum yellow; wings hyaline, the marginal cell with a slight fuscous cloud; the legs ferruginous, with the coxæ and trochanters black. The apical ventral segment emarginate at the apex, with a central acute spine.

Hab. S. Australia (Lower Plenty). (Coll. R. Bakewell, Esq.)

Species of Brazil.

16. ÆLURUS NASUTUS. Plate III. fig. 7 ♀.

Ælurus nasutus, *Klug, Berl. Abhandl.* (1842) 43. 1. f. 11 ♂, 12 ♀.

Hab. Brazil.

17. ÆLURUS CLYPEATUS.

Ælurus clypeatus, *Klug, Berl. Abhandl.* (1842) 43. 2 ♂.

Hab. Brazil.

Genus 3. ARIPHRON.

Ariphron, *Erichs. Wiegm. Arch.* (1842) p. 264.

1. ARIPHRON BICOLOR. Plate III. fig. 13 ♀.

Ariphron bicolor, *Erichs. Wiegm. Arch.* (1842) 266. 239. t. 5. f. 8, 8*a* ♀.

Westw. Arc. Ent. ii. 146.

Hab. Tasmania.

Notwithstanding the remarkable form of this insect, it is very

probable the discovery of the male will prove that it belongs to the genus *Ælurus*: this observation may serve to direct attention to this probability.

Genus 4. ANTHOBOSCA.

Anthobosca, *Guér. Voy. Coq. Zool.* ii. 237 (1830).
Thynnus, pt., *Klug, Berl. Abhandl.* 29 (1840–42).

1. Anthobosca Australasiæ.

Anthobosca Australasiæ, *Guér. Voy. Coq. Zool.* ii. 237, *Atlas, Ins.* pl. 8. fig. 10; *Mag. Zool.* (1842) *Mon. Thynn.* p. 13. pl. 104 (var.).
Thynnus Australasiæ, *Klug, Berl. Abhandl.* (1842) 24. 20 ♂.

Hab. Australia (Port Jackson).

2. Anthobosca nigra.

Male. Length 5½ lines.—Black; slightly shining: head and thorax strongly punctured, the abdomen very delicately so; covered with a short downy cinereous pubescence, most sparing and shortest on the abdomen. Antennæ short and stout, not so long as the abdomen; the clypeus truncated anteriorly; wings very slightly coloured, the nervures black; the anterior tibiæ fulvous within, the calcaria pale testaceous; the abdomen slightly depressed above, the terminal segment with its upper and also its ventral plate rounded at the apex.

Hab. Australia (Port Philip).

3. Anthobosca varipes. B.M.

Male. Length 4½–6 lines.—Black: the femora, tibiæ, and basal joints of the tarsi ferruginous, sometimes only the anterior tibiæ red within, sometimes entirely black; the calcaria and spines on the tarsi white, covered with a fine white, short, silky down; the head, thorax on the sides and beneath with longer cinereous pubescence; the antennæ stout, and shorter than the head and thorax, both the latter closely punctured; the wings hyaline, the nervures black. Abdomen delicately reticulated.

Hab. S. Australia (Lower Plenty).

4. Anthobosca Crabroniformis. B.M.

Male. Length 5½ lines.—Black: head and thorax very closely and finely punctured; the clypeus, mandibles, and inner orbits of the eyes yellow. Thorax: a large transverse bilobed macula on the prothorax, a spot on its side at the base of the anterior

coxæ, the tegulæ, a spot on the disk of the mesothorax, a subquadrate one on the scutellum, the post-scutellum, and a central and two lateral spots at the apex of the metathorax, yellow; wings subhyaline, nervures ferruginous. Abdomen: a subovate spot on each side of the second segment; a transverse line in the middle of the three following segments, interrupted in the middle, each line in succession narrower than the preceding.

Hab. Australia?

Genus 5. RHAGIGASTER.

Thynnus, pt., *Fabr. Syst. Ent.* 360 (1804).
Bethylus, pt., *Fabr. Syst. Piez.* 238 (1804).
Diamma, *Guér. Voy. de l'Astr.* 235.
Rhagigaster, *Guér. Voy. Coq. Zool.* ii. 214 (1830).
Thynnus, pt., *Klug, Berl. Abhandl.* 23 (1842).

1. RHAGIGASTER INTEGER.

Thynnus integer, *Fabr. Syst. Ent.* p. 360. 3 ♂; *Ent. Syst.* ii. 245. 4; *Syst. Piez.* p. 231. 4.
Donov. Epit. Ins. New Holl., Pl. Hym. Dipt. fig. *.*.
Kirby, Mon. Ap. Angl. i. 223.
Guér. Voy. Coq. Zool. ii. 229.
Rhagigaster integer, *Westw. Arc. Ent.* ii. 105. 6.

Hab. Australia.

This insect, which is unique in the Banksian Collection, has a very close general resemblance to a species of *Cœlioxys*; but it is a true Thynnideous insect, belonging to the genus *Rhagigaster*. Fabricius describes it as follows:—"Antennæ nigræ. Caput nigrum, fronte tomento cinereo pubescente. Thorax ater, immaculatus, scutello truncato, obtuso. Abdomen cylindricum, segmentis in medio atris, margine omni villoso cinereo. Anus integer, aculeo brevi, recurvo." The following particulars, obtained by an examination of the typical specimen, may be useful:—

Male. Length 6 lines.—Shining black: the face clothed with dense, long, pale yellowish pubescence; a transverse ridge on the front, and a horseshoe-shaped fovea above it, in which is placed a single ocellus; the clypeus deeply notched in front; the vertex with distant yellow punctures. The prothorax with its anterior margin raised, and covered with transverse striæ; the mesothorax with a longitudinal ridge on each side; the scutellum highly polished and truncate behind; the metathorax is depressed, rugose, and truncate behind; the wings hyaline, the

nervures black. Abdomen: all the segments with a fascia of silvery-white hairs at their basal and apical margins, the fasciæ attenuated in the middle, the space between smooth, shining, and with a few scattered punctures; the apical segment longitudinally sulcated, its posterior margin rounded and entire.

2. RHAGIGASTER APTERUS.

Bethylus apterus, *Fabr. Syst. Piez.* p. 238. 7 ♀.
Rhagigaster? apterus, *Westw. Arc. Ent.* ii. 106. 9.

Hab. New South Wales.

3. RHAGIGASTER UNICOLOR. B.M.

Rhagigaster unicolor, *Guér. Voy. Coq. Zool.* ii. 214 (1830) ♂.
Diamma ephippiger, *Guér. Voy. de l'Astrol.* p. 235 ♀; *Mag. Zool.* (1842) pl. 103. f. 1, 6.
Thynnus unicolor, *Klug, Berl. Abhandl.* (1842) 23. 18.
Rhagigaster ephippiger, *Westw. Arc. Ent.* ii. 105.

Hab. Tasmania (Port Jackson).

4. RHAGIGASTER MANDIBULARIS. B.M.

Rhagigaster mandibularis, *Westw. Arc. Ent.* ii. 105. 3 ♂.

Hab. Port Philip.

5. RHAGIGASTER MORIO. B.M.

Rhagigaster Morio, *Westw. Arc. Ent.* ii. 105. 4 ♂.

Hab. Australia.

6. RHAGIGASTER BINOTATUS. B.M.

Rhagigaster binotatus, *Westw. Arc. Ent.* ii. 105. 7 ♀.

Hab. Tasmania.

7. RHAGIGASTER ANALIS.

Rhagigaster analis, *Westw. Arc. Ent.* ii. 106. 8 ♀.

Hab. Australia (King George's Sound).

8. RHAGIGASTER? RUFICORNIS.

Myzine ruficornis, *Guér. Prodr. Mon. Myzines*, p. 11.
Thynnus ruficornis, *Guér. Mag. Zool.* pl. 99.
Rhagigaster? ruficornis, *Westw. Arc. Ent.* ii. 106 ♂.

Hab. Arabia.

9. RHAGIGASTER HÆMORRHOIDALIS. B.M.

Rhagigaster hæmorrhoidalis, *Guér. Mag. Zool.* (1842) 2 ♂.

Hab. Australia (Swan River).

10. RHAGIGASTER DIMIDIATUS.

Male. Length 9 lines.—Head, antennæ, thorax, anterior legs, and the intermediate and posterior coxæ, black; the intermediate and posterior tibiæ, tarsi, and femora, and also the abdomen, ferruginous; the head and thorax with a thin cinereous pubescence; the wings fusco-hyaline; the disk of the thorax transversely rugose; the abdomen with scattered shallow punctures; a transverse line on each segment a little before its apical margin, the intervening space very closely punctured; the terminal segment rounded at the apex and coarsely longitudinally rugose.

Female. Length 5 lines.—Black, elongate, with the intermediate and posterior legs, the anterior tarsi, and the two apical segments of the abdomen, ferruginous; the head, thorax, and basal segment of the abdomen with deep punctures, the second segment transversely and finely striated, the apical segment longitudinally striated.

Hab. Australia (Sydney).

11. RHAGIGASTER OBTUSUS.

Male. Length 8 lines.—Black, slightly shining, and thinly covered with griseous pubescence; head roughly punctured, the clypeus widely emarginate. Thorax roughly punctured; the prothorax with elongate transverse punctures, the anterior margin reflexed; the metathorax truncated, the truncation hollowed out on each side and transversely rugose; the disk very coarsely punctured; the wings subhyaline, the nervures black. Abdomen elongate, subcylindrical, strongly punctured; each segment has an impressed transverse line a little before the apical margin, the space between which and the margin is more finely and much more closely punctured; each segment with an oblique, smooth, shining elevation on each side; the apical segment rounded at the apex and longitudinally coarsely rugose.

Hab. Adelaide.

12. RHAGIGASTER REFLEXUS.

Male. Length 7 lines.—Black: the head and thorax with confluent punctures; head produced behind the eyes, rounded behind. Thorax oblong-quadrate, the sides before the wings parallel, the metathorax truncate; the disk of the thorax coarsely rugose; the anterior margin reflexed, produced laterally, and

subspinose; wings subhyaline, the nervures black. Abdomen truncate at the base, strongly punctured; the margins of the segments constricted.

Hab. Australia (Swan River).

13. RHAGIGASTER TRISTIS.

Male. Length 5 lines.—Black: head and thorax opake, covered with confluent punctures; the clypeus truncate; the mesothorax with coarse deep punctures, those on the metathorax finer; the wings hyaline and iridescent, the nervures black. Abdomen shining, roughly punctured; the margins of the segments constricted; the apical segment with coarse punctures at the base, its apex smooth, shining, and rounded.

Hab. Western Australia.

14. RHAGIGASTER APICALIS. B.M.

Male. Length 9 lines.—Black: the head and thorax coarsely rugose and subopake; abdomen punctured and shining, the margins of the segments constricted, and the two apical segments red. The clypeus with a raised central carina, which runs upwards to the anterior stemma; at the base of the clypeus an oblique carina emanates on each side, running upwards to an irregular transverse one in front of the anterior stemma; the antennæ stout, and shorter than the thorax; wings hyaline, the nervures black; the sides of the prothorax parallel, its anterior margin slightly reflexed; the metathorax truncate.

Hab. Australia.

This species is similarly coloured to the *R. hæmorrhoidalis* of Guérin, but is much larger, and is readily distinguished by its carinated clypeus and truncated thorax.

15. RHAGIGASTER CASTANEUS.

Female. Length 3½ lines.—Chestnut-red: the head shining, with scattered punctures, the face rugose. Thorax with large scattered punctures, the metathorax oblique; abdomen finely punctured.

Hab. Australia.

16. RHAGIGASTER NITIDUS.

Female. Length 4 lines.—Shining black, sparingly punctured: the face and antennæ obscurely ferruginous, the mandibles and legs bright ferruginous; the mesothorax with a deep depression

on each side, the metathorax with a shallow depression on each side; the apical segment bright ferruginous.

Hab. Australia.

Genus 6. TACHYPTERUS.

Tachypterus, *Guér. Voy. Coq. Zool.* ii. 216 (1830).
Psammatha, *Shuck. Trans. Ent. Soc.* ii. 68 (1837–40).

1. TACHYPTERUS FASCIATUS.

Tachypterus fasciatus, *Guér. Voy. Coq. Zool.* ii. 217.
Westw. Arc. Ent. ii. 102.

Hab. Australia (Kangaroo Island).

2. TACHYPTERUS CHALYBEUS.

Psammatha chalybea, *Shuck. Trans. Ent. Soc.* ii. 69. pl. 8. f. 1 ♂.
Westw. Arc. Ent. ii. 20. pl. 54. f. 5 ♂.
Tachypterus chalybæus, *Westw. Arc. Ent.* ii. 102.

Hab. Australia (Sydney).

3. TACHYPTERUS CRASSICORNIS. Plate III. fig. 10 ♂. B.M.

Male. Length 5 lines.—Black: the clypeus, the lower portion of the inner orbits of the eyes, the scape in front, the mandibles, palpi, the anterior coxæ and femora in front, and a line on the intermediate and posterior coxæ and trochanters, yellow; the antennæ incrassate, and about the length of the thorax. The wings hyaline and iridescent, the nervures dark testaceous, the stigma blackish; the legs ferruginous; the coxæ, trochanters, anterior and intermediate femora beneath, black; the intermediate and posterior tibiæ serrated exteriorly, the calcaria pale testaceous. Abdomen: the second, third, and extreme base of the fourth segment ferruginous; the abdomen covered with a short, changeable, silky cinereous pubescence; the head and thorax with longer pubescence of the same colour.

Hab. Australia.

The red colouring on the abdomen is more or less obliterated in different individuals; sometimes only the posterior margins of the segments are red or rufo-piceous.

Genus 7. ONCORHINUS.

Oncorhinus, *Shuck. Grey's Journ. Exped. King George's Sound, Append.* ii. 471.

1. ONCORHINUS XANTHOSPILOS. Plate III. fig. 15 ♂.

Oncorhinus xanthospilos, *Shuck. Grey's Journ. Exped. King George's Sound, Append.* ii. 471 ♂.

Hab. Australia (King George's Sound).

Genus 8. DIAMMA.

Diamma, *Westw. Proc. Zool. Soc.* pt. 3 (1835) p. 53 ♀.

1. DIAMMA BICOLOR.

Diamma bicolor, *Westw. Proc. Zool. Soc.* pt. 3. (1835) p. 53 ♀; *Arc. Ent.* ii. 21. pl. 54. f. 6 ♀.
• *Guér. Voy. Coq. Zool.* ii. 235.

Hab. Australia; Van Diemen's Land.

Genus 9. ISWARA.

Iswara, *Westw. Trans. Ent. Soc. Lond.* n. s. i.

1. ISWARA LUTEUS.

Iswara luteus, *Westw. Trans. Ent. Soc. Lond.* n. s. i. pl. 7. fig. 5. and details.

Hab. India.

APPENDIX.

THYNNUS MELLEUS.

Female. Length 4 lines.—The head black, smooth, and shining; the antennæ, mandibles, thorax, and abdomen beneath rufo-testaceous, the legs ferruginous. The thorax black and shining above, with a few scattered fine punctures; the anterior margin transverse. Abdomen obscure rufo-fuscous above, the first segment with a few coarse punctures, the second with two transverse grooves, the third, fourth, and fifth segments with their apical margins punctured.

Hab. Adelaide.

The male of this species is described in Westwood's 'Arcana Entomologica' (see *ante* p. 24).

THYNNUS VARIPES.

Male. Length 10 lines.—Black: the head and thorax densely clothed with cinereous pubescence, that on the disk of the latter tinged with yellow. The clypeus and mandibles yellow, the tips of the latter rufo-piceous; the clypeus produced and truncate at the apex. The tibiæ and tarsi sometimes ferruginous, with the apical joints of the tarsi fuscous; the pubescence on the thorax beneath and on the metathorax of a silvery brightness; wings hyaline, the anterior pair slightly coloured, their extreme base fuscous, the nervures black. Abdomen conical, the base truncate, the four basal segments with a transverse yellow band, which is slightly interrupted in the middle, and more widely so on each side; in some examples the bands are not interrupted in the middle, and only emarginate posteriorly at the sides; beneath, the abdomen is entirely black and shining.

Hab. Adelaide.

Note.—Only two specimens have been received, which exhibit the differences described; probably intermediate varieties occur.

THYNNUS PULCHRALIS.

Male. Length 7-7½ lines.—Head and thorax yellow; the vertex and thorax with a fulvous tinge above, the mesothorax black at the sides and beneath; the six basal joints of the antennæ ferruginous, the scape with a yellow spot in front; the mandibles rufo-piceous at their apex. The anterior tibiæ and tarsi ferruginous, and the femora with a yellow stripe at their apex beneath; the wings hyaline, with their base brown. Abdomen black and shining; the base and four basal segments yellow above, with the sides above each in succession blacker to the fourth, the third and fourth with also a pale yellow spot, a tinge of fulvous colour on the three basal segments; beneath, the basal segment has a triangular white spot in the middle; the second segment is white, with a black spot in the middle of its base; the third segment with a transverse white spot on each side of its apical margin; the fourth segment with two minute spots at its apical margin.

Hab. Adelaide.

THYNNUS (AGRIOMYIA) TRYPHONOIDES.

Female. Length 3 lines.—Ferruginous, shining, the head sparingly punctured; the prothorax deeply excavated above; the metathorax transverse and abruptly truncate; the abdomen delicately punctured.

Hab. Adelaide.

The male of this species is described at p. 34.

THYNNUS (AGRIOMYIA) FLAVESCENS.

Male. Length 4½ lines.—Head black; the orbits of the eyes, a V-shaped mark between the antennæ, the clypeus and mandibles, yellow. Thorax yellow; three black spots on the prothorax; a broad stripe on each side of the mesothorax, a bilobed spot in front, a large spot beneath the wings, and the pectus, black; the scutellum and metathorax yellow, both black at the base, the latter has also a black spot in the middle; the tibiæ and femora ferruginous, with the tarsi dusky; wings hyaline, the nervures black. The abdomen yellow, with a black band at the base of the segments, which is produced into an angular point in the middle; each segment has also a short narrow transverse line on each side; the black band broadest on the apical segments.

Female. Length 2¼ lines.—Yellow, with the head obscure rufo-fuscous; the metathorax black, transverse, with its margins

rounded. The apical margins of the first and second segments of the abdomen elevated into sharp carinæ, also a sharp transverse carina in the middle of the second segment.

Hab. Adelaide.

ÆLURUS INCANUS.

Female. Length 4¼ lines.—Black, closely punctured; the vertex shining and sparingly punctured; the antennæ and legs ferruginous; thinly sprinkled with erect glittering hairs; the thorax deeply constricted in the middle; the metathorax obliquely truncate, closely punctured and subopake; the terminal segment of the abdomen acute at its apex, which is pale testaceous, and thickly covered with fulvous hairs.

Hab. Adelaide.

The male of this species is described at p. 53.

RHAGIGASTER COMPARATUS.

Male. Length 5 lines.—Black: head and thorax coarsely rugose; the abdomen closely punctured, each segment with an oblique shining impunctate raised space on each side; the two apical segments ferruginous, and not so closely punctured as the preceding; covered with a scattered griseous pubescence; the wings hyaline, the nervures black; the tibiæ and tarsi obscure ferruginous; the segments of the abdomen constricted.

Female. Length 3½ lines.—Black, elongate and narrow, strongly punctured; the antennæ, legs, and two apical segments of the abdomen ferruginous; the thorax rounded anteriorly; the metathorax narrowed at its base and obliquely truncate at the apex.

Hab. Adelaide.

This species very closely resembles *R. hæmorrhoidalis*; but in that species the apical margin of the terminal segment of the abdomen is deeply emarginate in the middle, in the present species it is rounded and entire; the legs are also of a different colour.

EXPLANATION OF THE PLATES.

PLATE I.

Fig.
1. *Dorylus Hindostanus.*
2. *Rhogmus fimbriatus.*
3. *Labidus Burchellii.*
4. *Ænictus certus.*
5. Node of the abdomen of *Dorylus helvolus.*
6. Node of the abdomen of *Dorylus affinis.*
7. Node of the abdomen of *Dorylus nigricans.*
8. Node of the abdomen of *Dorylus glabratus.*
9. Node of the abdomen of *Dorylus Juvenculus.*

Fig.
10. Node of the abdomen of *Dorylus labiatus.*
11. Node of the abdomen of *Dorylus orientalis.*
12. Node of the abdomen of *Dorylus longicornis.*
13. Node of the abdomen of *Dorylus attenuatus.*
14. Node of the abdomen of *Dorylus atriceps.*
15. Node of the abdomen of *Dorylus atratus.*
16. Node of the abdomen of *Dorylus Hindostanus.*

In this Plate the nodes of the abdomen are figured in profile, and are reversed, to show the form of the scale, or flattened process, in the different species, which apparently forms a good distinctive specific character.

PLATE II.

1. Anterior wing of *Labidus Jurinii.*
2. Anterior wing of *Labidus Panzeri.*
3. Anterior wing of *Labidus Illigeri.*
4. Anterior wing of *Labidus atriceps.*
5. Anterior wing of *Labidus Hopei.*
6. Anterior wing of *Labidus Klugii.*
7. Anterior wing of *Labidus Romandii.*
8. Anterior wing of *Labidus Swainsonii.*
9. Anterior wing of *Labidus Guerinii.*
10. Anterior wing of *Labidus Servillei.*
11. Anterior wing of *Labidus Burchellii.*
12. Anterior wing of *Labidus Halidaii.*

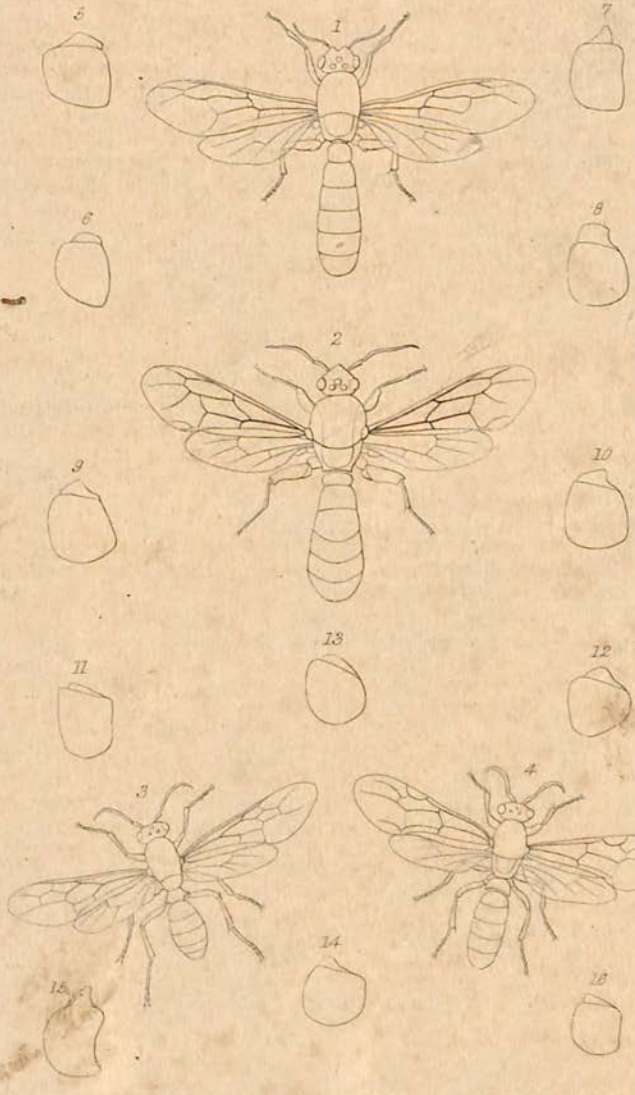
PLATE II. (*continued*).

Fig.
12*a*. Node of the abdomen of *Labidus Halidaii*.
13. Anterior wing of *Labidus morosus*.
13*a*. Node of the abdomen of *Labidus morosus*.
14. Anterior wing of *Labidus amplipennis*.
14*a*. Node of the abdomen of *Labidus amplipennis*.

Fig.
15*a*. *Ænictus inconspicuus*. *b*. Antennæ of ditto. *c*. Node of the abdomen of ditto.
16. Node of the abdomen of *Ænictus ambiguus*.
17. Node of the abdomen of *Ænictus pubescens*.

PLATE III.

1. *Thynnus variabilis* ♂.
2. *Thynnus variabilis* ♀.
3. Labial palpi of *Thynnus variabilis*.
4 Maxillary palpi of *Thynnus variabilis*.
5. Anterior wing of *Anthobosca*.
6. *Ælurus basalis* ♂.
7. *Ælurus nasutus* ♀.
8. Labial palpi of *Ælurus clypeatus*.
9. Maxillary palpi of *Ælurus clypeatus*.
10. *Tachypterus crassicornis* ♂.
11. Labial palpi of *Ælurus clypeatus*.
12. Maxillary palpi of *Ælurus clypeatus*.
13. *Ariphron bicolor* ♀.
14. Wing of *Rhagigaster*.
15. *Oncorhinus xanthospilos* ♂.
16. *Thynnus* (*Agriomyia*) *hæmatodes* ♂.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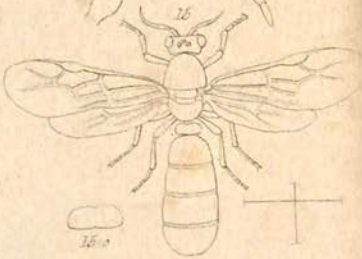
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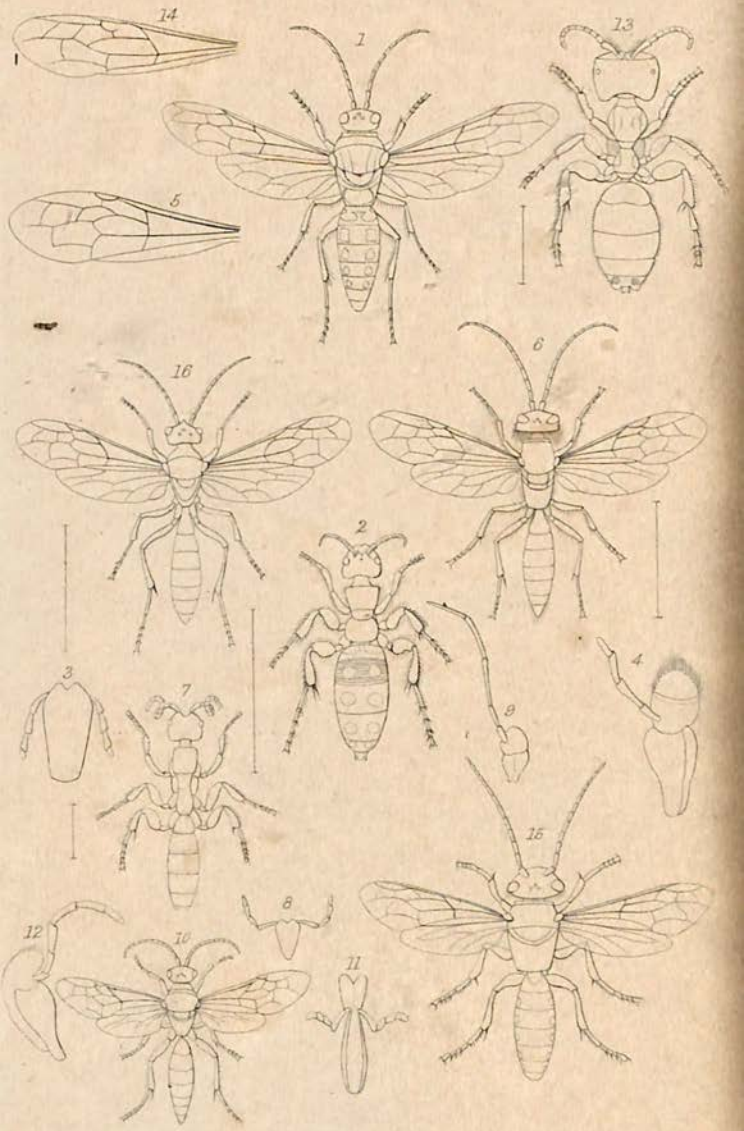
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